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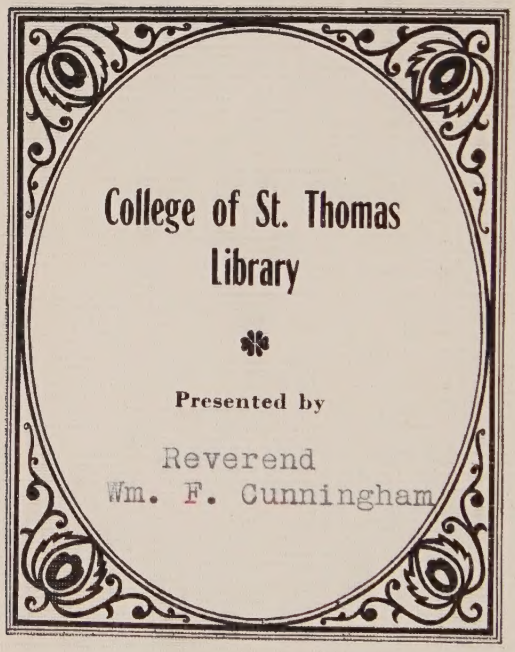


INTRODUCTION TO AMERICAN ECONOMIC HISTORY

By the Same Author

HISTORY OF ECONOMIC PROGRESS IN THE UNITED STATES

By **Walter W. Jennings** (University of Kentucky)

"The book contains more systematic information about economic development in this country than has ever before been made available in so usable a form."

—*New York Times.*

836 pages (6 x 9) and map

THOMAS Y. CROWELL COMPANY

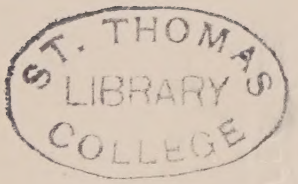
PUBLISHERS. NEW YORK

INTRODUCTION TO AMERICAN ECONOMIC HISTORY

BY

WALTER W. JENNINGS, PH.D.

PROFESSOR OF ECONOMICS IN THE
UNIVERSITY OF KENTUCKY



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TO THE MEMORY OF MY NEPHEW
WALTER SCHENCK STOUTENBOROUGH

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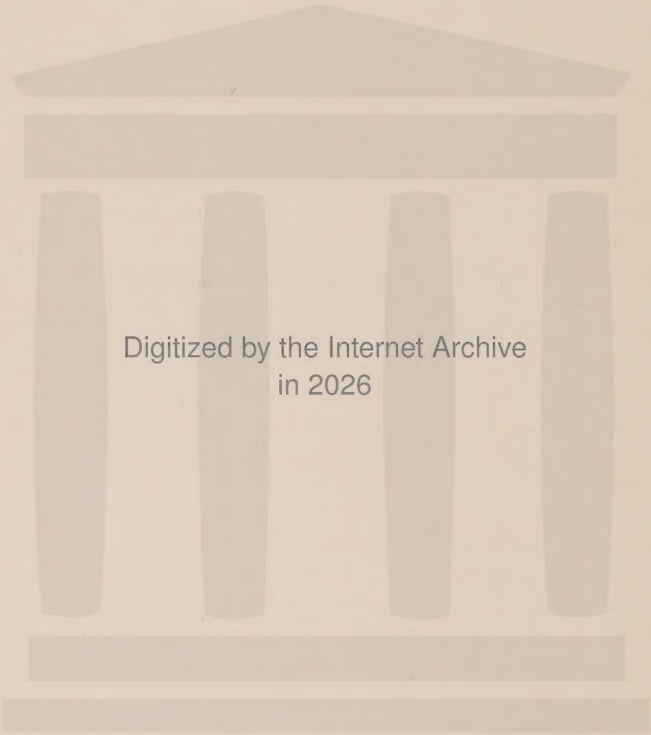
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PREFACE

In 1926 the present writer issued a work entitled "A History of Economic Progress in the United States." This dealt in over 800 pages with the whole course of our economic progress, and was addressed to advanced college students.

In the present briefer work, the author has attempted a topical method of treatment. To lessen the burden of statistics he has made use of a hundred charts. The text is thus better adapted to beginners in economic history, and can be used profitably in junior college work.

In view of its more simplified and popular treatment, the writer believes and hopes that the book will prove equally useful to the busy business man as to the college student. Undoubtedly the success of any business is based upon a clear knowledge of existing conditions—and it is of yet more value if this knowledge is grounded upon former conditions which have led up to the present.

The acknowledgments of the writer are again due to those who have given assistance both in the earlier work and in the present. The Preface to "A History of Economic Progress" cites many of these by name. To two others credit is also due—Dr. Rudolph Peterson, a former colleague at the University of Iowa, who read the entire manuscript, and to Rienzi W. Jennings, brother and graduate student in commerce, for proof reading and index-making.

WALTER W. JENNINGS.

Lexington, Kentucky
January, 1928

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INTRODUCTION TO AMERICAN ECONOMIC HISTORY

CHAPTER I

EXPLORATION AND SETTLEMENT

Three Marvelous Centuries.—The economic growth of America is one of the marvels of history. Three centuries ago this land was a wilderness, overgrown with dense forests and peopled only by a few hundred thousand savages. With the beginning of the seventeenth century the first feeble settlements on the part of European colonists began. Within the three centuries which have elapsed, the world has witnessed the amazing growth of a new power—first through the uncertain steps of its colonial life—next as a young nation—and finally as the dominating nation of the world.

In these three centuries, from a mere handful our population has increased over a hundred million; our wealth to three hundred billions of dollars. The steps by which all this has been accomplished are of keen interest to every student of economics and history.

Important Factors.—The United States of America has been fortunate in its location and resources. Its climate is temperate, its soil fertile and well watered, its natural wealth of minerals and timber well-nigh inexhaustible. Furthermore, it lies along the direct trade routes leading from Europe to the West.

World power has shifted from the subtropic regions to the temperate zone. Variations of heat and cold, of abundance and want seem necessary to call forth man's best

efforts. By his efforts he grows. And so wealth and civilization seem to be a product of moderate adversity. No large country has a better climate than the United States. This varied climate with our vast extent of territory makes for a diversity and an amount of agricultural products that few other countries can approximate. And so the United States, settled by the hardiest blood of Europe, favored by a wide expanse of fertile territory, abundant natural resources, and a good climate, has developed into the strongest and wealthiest of countries.

Another foundation of our economic greatness is our rich and varied mineral wealth. For the first century of our national life comparatively little was done to develop this. Since 1880, development has been exceptionally rapid due in part to the use of the steam shovel in open-cut mines, and the development of power machinery for cutting and handling in the pit mines. To-day the United States leads the world in extent and variety of mineral products. Of coal, lead, zinc, iron, copper, and petroleum she contributes from a third to two-thirds of the world's supply. Though she is dependent upon other countries for some of the necessary minerals, only in tin of the important mineral products is she notably deficient.

Even more important in the early development of the country than the minerals was our forest wealth. In all probability the original stand of timber in this country covered 850,000,000 acres. Fear of Indians and the wild beasts that lurked in the shadows of the forests, and the need for agricultural land, led to the rapid destruction of the trees. But based upon the forests arose such important colonial industries as ship-construction, house-building, furniture-making, the preparation of naval stores, and the manufacture of pot and pearl ashes. Whether regarded as a curse or a blessing, then, the stand of trees was rapidly reduced. So vast were these resources and so reckless their expenditure, that only within the last generation has a note of warning been sounded.

In the early history of any country the animal life is of great significance, but with the growth of population that

importance correspondingly declines. From deer, elk, moose, caribou, mountain sheep, musk ox, bison, beaver and other fur-bearers, the Indians obtained not only food but materials for clothing, shelter, weapons, and other necessities. Of the abundant wild life found by the colonists only the turkey was fully domesticated. Without question the most important service furnished the settlers was food; pigeons, turkeys, prairie chickens, ducks, geese, quail, deer, squirrels and other game, including fish, varied the table diet, and through abundant and cheap meat tended to make the farmer self-sufficient. In a commercial way the furs and fisheries proved still more important, building up our first export trade and merchant marine.

Despite the enormous potential wealth of this country, development was slow at first. For more than a century after Columbus's three small vessels had sighted the new world it still lay fallow and neglected. Even after the first few settlements had been founded along the Atlantic coast, the interior was still virgin wilderness. In this book it is our purpose to trace the successive steps in trade and industry by which the country was developed. To do this, we must begin by looking at Europe and her trade routes at the time just prior to western exploration.

Eastern Trade Routes.—The Crusades, the Renaissance, or revival of learning at the end of medieval times, and the invention of printing, gunpowder, and the mariners' compass, though important events in the inauguration of this new era, are so well known as not to require discussion here. And so we shall turn to the discussion of trade routes. During the Middle Ages, Europe produced woolen goods, arsenic, tin, copper, lead, quicksilver, gold, silver, and manufactured luxuries, which she desired to exchange for spices, sugar, dyes, glass, cutlery, precious stones, drugs, cottons, silks, and other products, chiefly obtainable from the East.

Prior to the Crusades, people in general knew little concerning the routes of this trade. In ancient times maritime trade had flourished, but it had been throttled by the barbarian invasions of the fifth and succeeding centuries.

The Crusades revived knowledge of the Near East, and Italian cities such as Bari, Trani, Brindisi, and Taranto in the extreme south, Amalfi on the Bay of Naples, and Genoa and Venice came into prominence as ports of departure. Two of the three main trade routes used to the Far East began at Malacca in southeastern Asia. One crossed to the southern coast of India, travelled the Arabian Sea to the mouth of the Red Sea, and thence on to the Isthmus of Suez and by land or river to Cairo; the other followed the coast more closely to the Persian Gulf and then went up the Tigris-Euphrates Valley to Bagdad and then branched out toward Tabriz to the north, toward Antioch, Damascus, or Jaffa to the west, or toward Alexandria to the southwest. The third route was in reality a system of routes, all by land, leading from China and India to Samarkand and Bokhara. From the latter point the routes branched, one going to the Caspian, up the Volga, and on to the Baltic and the other continuing west to Trebizond on the Black Sea and on to Europe.

From about 1000 to 1500 the Italians carried on the main part of the Eastern trade, with Venice, Genoa, and Pisa struggling for supremacy and Florence developing into a banking and manufacturing center. From the Italian cities, particularly Venice, goods were carried north by Germans, who were compelled to live in buildings set aside for that purpose and to conduct their operations, while in Italy, under strict government supervision. Trade was likewise carried on with Lisbon, Bruges, and London by sea, the so-called "Flanders galleys," protected by war vessels, making yearly trips for decades.

Shifting of Trade Centers.—Up to this time none knew or dared attempt the route to the West—across the unknown Atlantic. But forces were already in operation tending to shift the trade center from the Mediterranean to the Atlantic. Europe's overmastering desire for Eastern products, and the heavy charges of transportation made necessary new and cheaper routes to the East. Then, too, Venice and Genoa declined in sea power due to mutual rivalries and also to the conquest of Asia Minor by the

Ottoman Turks, who hated Christians and despised merchants. Beginning about 1300 they pushed their conquests to the north and south. Constantinople fell in 1453. By the beginning of the sixteenth century the Turks had occupied the Balkans, the territory around the Sea of Azov, Asia Minor, Syria, and Egypt. By the capture of Damascus in 1516 and Cairo the next year they established control over the three great trade routes to the East. The military power of Genoa and Venice was broken in this process, but some authorities discount the theory that the Turks interfered with trade routes and thus stimulated exploration.

Portuguese Explorations.—Even before Columbus had discovered America the Portuguese under the inspiration of Prince Henry the Navigator were pushing down the west coast of Africa. In 1441 Nuño Tristam discovered Cape Blanco, four years later Dinis Diaz reached Cape Verde fifteen hundred miles down the west coast of Africa, and in 1486 Bartholomew Diaz rounded the Cape of Good Hope. In bulls of 1493 and 1494 Pope Alexander VI tried to assign certain regions for exploration and settlement to Spain and Portugal and as settled by the Treaty of Tordesillas, the line was pushed to 370 leagues west of the Cape Verde Islands. The main result was to give Brazil to Portugal and to encourage Spain in the belief, after the discovery of the great distance of the Spice Islands from India, that they really fell within her sphere of influence.

Three years after the treaty, Vasco da Gama began his epoch-making voyage with four vessels, which, in spite of trouble with the natives, a plague of scurvy, a lack of suitable gifts for the natives, and Arabian opposition, resulted in the rounding of Africa and the reaching of Calicut. In that voyage he lost his brother, over half his crew, and half his vessels, but in the words of Richard Henry Major, "he brought back the solution of a great problem which was destined to raise his country to the very acme of prosperity." The return cargo itself is said to have repaid sixtyfold the cost of the expedition.

About a year after Da Gama's return Pedralvarez Cabral

sailed from Lisbon for India with a fleet of thirteen vessels, but was probably carried further westward than he realized by the equatorial current and sighted the eastern coast of Brazil, thus proving as Professors Bourne, Simons, and others point out that the new world would have been found within a short time of its actual discovery, through the activities of Prince Henry the Navigator, even if Columbus had never lived. The definite discovery of the Western trade routes, however, must be credited to Christopher Columbus, who made the first of his four voyages in 1492. Amerigo Vespucci, a Florentine navigator, also made four voyages to America—1497, 1499, 1501, 1503, perhaps reaching the mainland of America even earlier than Columbus or the Cabots. Gaspar and Miguel Cortereal, Portuguese adventurers, explored in the region of Newfoundland or the northeastern part of the United States and lost their lives, but nothing came of their explorations.

Motives in Exploration and Settlement.—After the new routes had been opened by Portugal and the new world had been reached by Spain, exploration and colonization began from three main reasons—political, religious, and economic. It is our purpose to emphasize briefly these reasons before sketching somewhat in detail further explorations and actual settlements. Each nation desired to obtain as much land as possible. When Spain and Portugal grew wealthy from their new possessions and increased their political power, France, Holland, and Sweden attempted to gain parts of North America for political reasons. And the struggle of these nations for power led England to encourage the settlement of the thirteen colonies as a check to the northward expansion of Spain and the southward expansion of France. So, too, differences in political ideas also sent many to America.

The religious motive was exceptionally strong in the age of Reformation. Vasco da Gama looked for Christians and spices. Columbus believed that the possession of gold would aid in helping souls into paradise. French Jesuits struggled on in advance of fur-traders, baptizing as they

went. Drake and Hawkins believed that they were rendering an acceptable service to God by fighting and robbing the Catholic Spanish. The brave Sir Humphrey Gilbert pointed out the benefits that would result from the Christian religion, namely, turning the natives "from falsehood to truth, from darkness to light, from the highway of death to the pathway of life, from the devil to Christ, from hell to heaven." John Smith considered the first object of the Virginia plantation the salvation of "poore and miserable souls wrapt up unto death in almost invincible ignorance." And so Separatists, Puritans, Quakers, Catholics, Huguenots, and various sects of Germany and other countries entered the colonial field for a religious asylum, and missionaries of all faiths strove to make converts. A glance at the English colonies reveals the fact that Separatists and Puritans founded New England to secure not religious freedom, but a place where they could control forms of worship. Puritanism drove Roger Williams from Massachusetts to Rhode Island, exiled Anna Hutchinson, hastened Hooker's settlement of Connecticut, and sent English Cavaliers and Catholics to Virginia and Maryland respectively. Persecuted French Huguenots found shelter in the Carolinas. Quakers, Mennonites, Moravians, and other religious sects carved homes in Pennsylvania, New Jersey, and elsewhere. In all of the English colonies were numerous settlers who came for religious reasons.

But more important than the political and religious motives were the economic motives. The search for new routes to the East in order to obtain spices was the original motive in the discovery of America. And for a century explorers sought an opening through the new world continent in order to reach those riches. When Cortez discovered gold and silver in Mexico in 1519 and Pizarro in Peru in 1531, Spain found temporary prosperity and other nations sought the same precious metals. But in time all countries realized that America had other products of value. Soon the fishing fleets of Europe were struggling for the riches of the sea. In time the fur trade also rivalled

gold in importance and the nations likewise fought for it. Sugar, tobacco, cocoa, and naval stores furnished valuable raw materials for a needy Europe. England and other countries also began to vision the value of possessions as a market for manufactured goods. And so the struggle for possession grew in intensity.

Some economic motives concerned more especially the individuals and in all colonies were numerous men who came here to improve their financial well-being. Land was cheap. Feudal lords were absent. Guild restrictions were almost unknown. Sons suffering from the law of primogeniture saw a chance for betterment in the new world. Then, too, the feeling was prevalent that various countries in sixteenth and seventeenth century Europe were overpopulated and that the American colonies supplied a vent for this extra population. In England itself this theory rested upon the large number of beggars and thieves, natural results of religious changes, Elizabethan wars, and land enclosures for sheep pasturage. And so thousands left known ills for unknown ills, many for the better, some for the worse.

Spanish Explorations.—Having noted the motives in some detail, we shall take up the explorations and settlements of various countries. Of the Spanish explorers one of the most important, except, of course, Columbus who is too well-known for discussion, was Nuñez de Balboa. Having fled from his debts in Española by the unique method of having himself nailed in a cask with water and provisions, Balboa rose to fame by his courage and ability and the discovery of the Pacific in 1513, only to lose his life four years later at the hands of a cruel and jealous governor, Pedrarias Davila. Next we are attracted by the story of an old man, Ponce de Leon, seeking the fountain of perpetual youth and discovering in 1513 Florida where he received a death-dealing wound rather than a life-giving bath eight years later. Then in 1517 Francisco Fernandez of Cordova appeared on the scene and discovered Yucatan and the Bay of Campeachy, but he, too, received a mortal wound at the hands of the natives. Two years later, Alonzo

Arctic Circle
EMPIRE OF THE MONGOLS
Peking
Marco Polo
CATHAY
NIPON
JAPAN
Zipangu 1549
KIUSIU 1542
Canton 1517
PACIFIC OCEAN
Tropic of Cancer
C. Mendocino 1542 ?
California 1532
Colorado
Pegu
Siam
Manila
PHILIPPINES 1521
LADRONES 1521
Marco Polo
Malacca 1509
BORNEO
CAROLINE IS. 1528
Equator
SOUTH SEA
SUMATRA
CELEBES
NEW GUINEA
JAVA 1511
Magellan's Voyage
Victoria 1522
ESPIRITU SANTO 1606
Magellan 1521
KHAIFISCH I.
MARQUESAS 1595
S. BERNARDO 1595
SOLITARIA 1595
SAN PABLO 1521
TAHITI 1606
Tropic of Capricorn
JUAN
PORTUGUESE
SPANISH
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Vasco da Gama, 1497-99
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Columbus 1st Voyage, 1492-3
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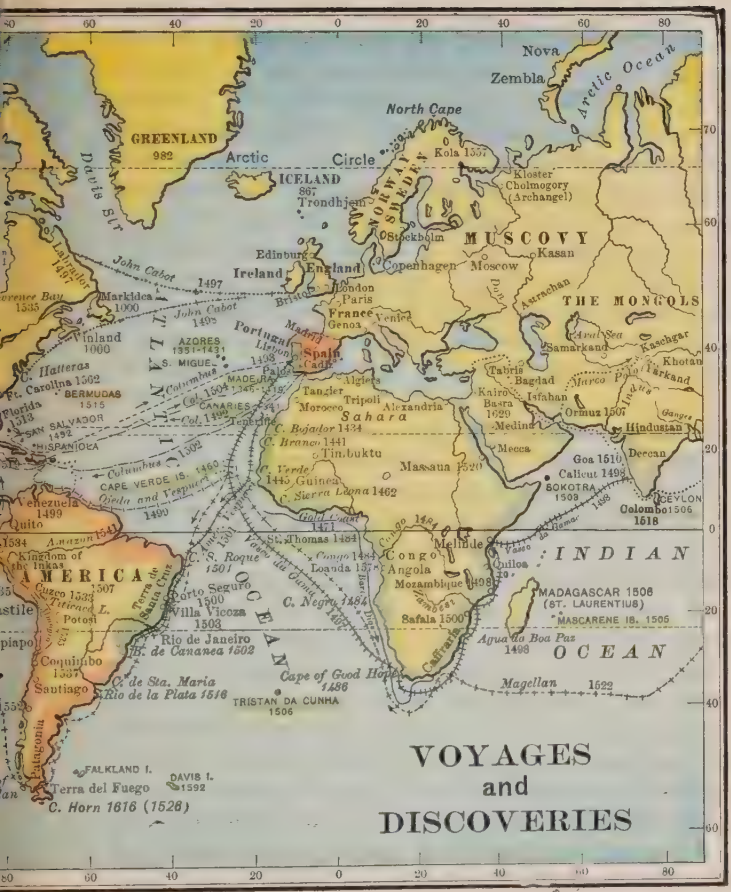
Ojeda and Vespucci, 1499-1500
Marco Polo, 1271-95
Ferdinand Magellan, 1519-
Pizarro, 1524 and 1532-34
Almagro, 1535-37
John Cabot, 1497-98


VOYAGES
and
DISCOVERIES
Nova Zembla
Arctic Ocean
North Cape
GREENLAND
982
Arctic Circle
ICELAND
867
Trondhjem
Davis Str.
Kola 1557
Kloster Cholmogory (Archangel)
Stockholm
MUSCOVY
Kasan
Copenhagen
Moscow
Edinburg
Ireland
England
London
Paris
Bristol
France
Genoa
Venice
Madrid
Portugal
Spain
Cadiz
Palos
Algiers
Tangier
Tripoli
Morocco
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MASCARENE IS. 1505
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Tabriz
Bagdad
Kairo
Basra 1629
Isfahan
Ormuz 1507
Medina
Mecca
Samarkand
Khotan
Yarkand
Marco Polo
Hindustan
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Goa 1510
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John Cabot 1498
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Villa Vicoza 1503
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B. de Cananea 1502
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DAVIS I. 1592
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Egypt
Abyssinia
Nubia
Sahara
Guinea
Congo
Angola
Zambesi
Caffraria
Madagascar
Mozambique
Zanzibar
Malabar
Deccan
Ceylon
Indus
Ganges
Caspian Sea
Aral Sea
Black Sea
Mediterranean
Atlantic Ocean
Pacific Ocean
Indian Ocean
Arctic Ocean
Nova Zembla
North Cape
Kola
Kloster Cholmogory (Archangel)
Stockholm
Copenhagen
Moscow
Kasan
Edinburg
Ireland
England
London
Paris
Bristol
France
Genoa
Venice
Madrid
Portugal
Spain
Cadiz
Palos
Algiers
Tangier
Tripoli
Morocco
Alexandria
Sahara
Tenerife
C. Bojador 1434
C. Blanco 1441
Timbuktu
C. Verde 1445
Guinea
Massaua 1520
Sierra Leona 1462
Gold Coast 1471
St. Thomas 1484
Congo 1483
Loanda 1578
Congo
Angola
Mozambique 1498
Melinde
Quiloa
Safala 1500
Cape of Good Hope 1486
TRISTAN DA CUNHA 1506
Agua da Boa Paz 1498
Magellan 1522
MADAGASCAR 1506 (ST. LAURENTIUS)
MASCARENE IS. 1505
INDIAN OCEAN
Tabriz
Bagdad
Kairo
Basra 1629
Isfahan
Ormuz 1507
Medina
Mecca
Samarkand
Khotan
Yarkand
Marco Polo
Hindustan
Deccan
Goa 1510
Calicut 1498
SOKOTRA 1503
CEYLON
Colombo 1506
1518
THE MONGOLS
Aral Sea
Kaschgar
Indus
Ganges
Caspian Sea
Don
Astrachan
Vinland 1000
Markidea 1000
John Cabot 1497
John Cabot 1498
AZORES 1351-1431
S. MIGUEL
MADEIRA
Columbus 1498
Columbus 1502
Columbus 1506
Col. 1498
CANARIES
Col. 1499
C. Hatteras
Ft. Carolina 1562
BERMUDAS 1515
Florida 1513
SAN SALVADOR 1492
HISPANIOLA
Columbus 1502
CAPE VERDE IS. 1460
Ojeda and Vespucci 1499
Venezuela 1499
Quito
Amazon 1541
Kingdom of the Inkas
AMERICA
Cuzco 1533
Titicaca L.
Potosi
Terra de Santa Cruz
Porto Seguro 1500
Villa Vicoza 1503
C. Negro 1484
Rio de Janeiro
B. de Cananea 1502
Coquimbo 1537
Santiago
C. de Sta. Maria
Rio de la Plata 1516
Patagonia
FALKLAND I.
DAVIS I. 1592
Terra del Fuego
C. Horn 1616 (1526)
Labrador 1497
Verrazano 1524
Cabot 1497
Cabot 1498
Greenland
Davis Str.
Arctic Circle
Iceland
Norway
Sweden
Finland
Russia
Poland
Germany
Austria
Hungary
Turkey
Persia
Arabia
Egypt
Abyssinia
Nubia
Sahara
Guinea
Congo
Angola
Zambesi
Caffraria
Madagascar
Mozambique
Zanzibar
Malabar
Deccan
Ceylon
Indus
Ganges
Caspian Sea
Aral Sea
Black Sea
Mediterranean
Atlantic Ocean
Pacific Ocean
Indian Ocean
Arctic Ocean

de Pineda sailed along the coast of Florida to Vera Cruz and perhaps discovered on the way the mouth of the Mississippi. In the same year, Fernando Magellan, a Portuguese in the service of Spain, began his circumnavigation of the globe, but lost his life in the Philippines in an attempt to aid some Christianized natives against their enemies. On September 7, 1522, the *Victoria* alone of the five vessels reached Portugal with eighteen Europeans and four natives. Later the *San Antonio* returned with eighty men from the Straits Settlement, but of the remaining 160 men who accompanied Magellan only thirty-six returned. Yet the cargo of cloves of some twenty-six tons exceeded the cost of the expedition. In the same noted year, 1519, Cortez began his conquest of Mexico and a year later Lucas Vasquez de Ayllon began a slaving career which included an unsuccessful attempt to form a settlement on the Carolina coast.

In 1525 Stephen Gomez, in search of a northern route to India, entered the bays of New York and New England, but soon degenerated from explorer to slaver. Two years later, Pamfilo de Narvaez began the expedition of discovery which resulted disastrously to him and most of his men, but which covered the intrepid Cabeza de Vaca with glory as the first European to cross what is now the United States, a journey completed in 1536 after six years of apprenticeship among the Indians. In South and Central America the Spanish were pushing their conquests and in 1531-1534 Francisco Pizarro by intrigue, cruelty, and treachery of the most abominable sort acquired the riches of the Incas of Peru. Next the ambitious Ferdinand de Soto appeared on the scene and discovered the Mississippi in whose mighty waters he found his grave. About the same time, 1540-1542, Francisco de Coronado, following the failure of Friar Marcos, went in search of the seven famous cities of Cibola, but though he or his lieutenants crossed Kansas twice, explored the upper valleys of the Rio Grande and Gila, ascended the Colorado for 250 miles, and went as far east as the Missouri, he returned to confess failure and lose his governorship of New Galicia. Before

the century closed, however, the Spanish had settlements in what is now the United States at St. Augustine (1565) and Santa Fé (1582).

Spanish Policy.—In Spain itself faulty political organization, the executions of the Inquisition, the expulsion of the Moors and the Jews, and taxes so heavy that, according to Ulloa, it was profitable not to work, furthered decline. High customs duties on the frontier and in the interior and the privileges of the Mesta, largely employed in raising merino wool at the expense of agriculture, aided in the decline. And the colonial administration was too faulty to stop decay. Rather it made Spanish failure in the long run unavoidable. From 1503 to 1717 all commerce to or from the colonies had to go through Seville. During most of this period goods had to be landed at Porto Bello if for South America and Vera Cruz if for Mexico. English and other pirates were so strong by 1561 that the government established the system of yearly fleets. Each year two fleets would form and sail to the West Indies under the protection of warships. At some West India point they would separate, one fleet going to Porto Bello and the other to Vera Cruz. But as a matter of fact there were numerous years, especially in the eighteenth century, when no fleets sailed.

Emigrants were discouraged from going to the new world by the difficulty in securing permission and by the scanty chances of making a living when there. They could not engage in industries which would compete with Spanish industries. They were compelled to reside in some particular province and were hampered by restrictions relative to inter-colonial trade as well as with the mother country. A settler on the La Plata, according to Professor Clive Day, might have to cross to Lima, go up the west coast, and across the isthmus to Porto Bello. When Buenos Ayres was allowed the privilege of receiving two ships a year, a customs frontier was used to prevent goods from reaching Peru by the new route. About 1750 the Spanish colonial system was reformed to some extent, Spanish merchants first being allowed to send out ships independently

and in 1748 the fleets were entirely given up. But the reform came too late.

The "palmeo," an export duty common in the eighteenth century, was levied on wares in proportion to bulk rather than value, thus encouraging the exportation from Spain of the more valuable foreign manufactures and discouraging the bulkier but less valuable Spanish exports. Of course, restrictions in the home country and in the colonies lessened trade. Even worse customers than the Spanish settlers were the Indians. Natives who in dress approximated a state of nature and grew no beards were compelled to buy silk stockings and razor blades. But the demand was forced and temporary. Smuggling became common, the government proving unable to maintain its restrictions against foreigners. England in 1713 obtained by treaty a monopoly of the slave trade with the Spanish possessions, sending out about five thousand slaves a year. She also obtained the right to send out a trading vessel of five hundred tons, but its capacity was secretly enlarged and transports were employed to carry more goods.

Articles actually carried in the trade to the colonies were wines, figs, raisins, olives, cloth, iron, and quicksilver. To enlarge markets and increase the demand for these products, the culture of such things as olives, vineyards, tobacco, and hemp was prohibited in the colonies. Cargoes returning from the colonies included gold, silver, cochineal, sugar, hides, cocoa, vanilla, sarsaparilla, quinine, and maté. Most agricultural products were too bulky to stand transportation well, and so more valuable products were sent out. At Porto Bello, at the fair marking the arrival of the fleet, silver wedges from the mines of Peru, so it is said, "lay like heaps of stones in the street without any fear or suspicion of being lost."

But even though gold and silver were the chief exports at first, a large part of the population of the Spanish colonies lived by farming and by cattle herding. Hides, corn, sugar, cocoa, the American aloes, vanilla, and cochineal supplied more valuable products than the mines. A grant of land, known as the *encomienda,* carried command over

a certain number of Indians, who were thus forced to raise crops, to tend cattle, and to dig minerals. And this system, in spite of some efforts to help the natives, meant serfdom. In 1574, there were said to be two hundred Spanish settlements with 160,000 Spaniards, of whom four thousand were lords of serfs, and an Indian population of approximately five million in eight thousand or more villages. The Indians were not exterminated or driven away; they were made serfs. And Spaniard and Indian intermingled to form the "half-breed" so common south of the Rio Grande.

Swedish Attempts.—For a brief period only—the rule of Gustavus Adolphus—did Sweden hold an important place in Europe. That sovereign conceived the plan of making the Baltic a Swedish lake by securing control of its entrance and coasts, but when his life went out in the murderous Thirty Years' War his country speedily sank back to its old position, though an attempt was made to develop colonies in the Delaware region. In 1638 Governor Peter Minuit led a colony to Christiana. Poor in numbers and resources and unsupported by the home government, the colony fell to the Dutch in 1655 and nine years later to the English.

Dutch Settlements.—Holland, wresting independence from Spain, poor in natural resources but rich in the abilities of her people, forged to the front in eastern trade earlier than did the English and made settlements in the new world. The East India Company, founded in 1602, dominated the eastern trade and helped make Holland temporarily supreme following the decline of Portugal. Tea, coffee, pepper, sugar, mace, nutmeg, camphor, indigo, and clove thus raised her to power. But in 1640, according to Professor Clive Day, 1,600 out of 3,450 ships passing through the sound to the Baltic were Dutch. The Dutch West India Company, formed in 1621, controlled the trade west of the Cape of Good Hope to the Straits of Magellan. With the loss of possessions in Brazil and New York, leaving only Dutch Guiana, some West India islands, and Guinea the company dissolved. In Europe through lack

of resources Holland fell before England's navigation policy.

Henry Hudson in 1609 in behalf of the Dutch East India Company explored the New York river named in his honor and five years later New Amsterdam was established as a fur-trading post. Probably the first farming was done by servants working for the company which had the ownership of land and stock. In 1629 the patroon system was introduced. Any company member who transported fifty individuals over fifteen years of age was given a tract of land sixteen miles long on one side of the river or eight miles long on both and as far into the interior as he cared to cultivate. The lord appointed officers, held civil and criminal court, and handed down his powers and estate to his eldest son. The men agreed to serve a period of years, to grind their grain at his mill and to pay for the service, not to hunt or to fish without his permission, to buy their cloth from the company, and to pay rents rather than taxes. The patroon, for his part, bound himself to support schools, churches, and public institutions from the rent money. Naturally the large tracts of land and harsh conditions kept out many prospective settlers. In 1640 the company tried to introduce two hundred acre tracts tilled by five men brought over at the expense of the proprietor. Ten years later a tract of land together with implements and stock was granted to the settler on condition that he pay a stated rent and return the stock or its equivalent in six years.

Not until the closing years of Dutch rule was the principle of representative government recognized. Lack of support from the home country and its poor government made New Netherlands especially susceptible to attack. Thrust in between the eastern and southern colonies it was a constant temptation to English covetousness. Seeking religious freedom offered by the Dutch many English had been coming in from east and south and thus furnished an entering wedge. Decline of Holland, lack of company interest, despotic colonial government, and the developing power of England led to its capture in 1664. Its popula-

tion at that time, according to Stuyvesant, was about ten thousand. No less than nineteen languages were then spoken in New Amsterdam, soon renamed New York.

French Explorations and Settlements.—Within seven years after the discovery of America, the fisheries of Newfoundland were known to the hardy mariners of Brittany and Normandy and attempts were early made at fishing settlements. In 1524 the Florentine navigator, John Verrazzano, in a single vessel, the *Dolphin,* explored the coast from the Carolina region to Nova Scotia. Ten years later Jacques Cartier explored the mouth of the St. Lawrence, but a later attempt failed because the settlers were "jail-birds" and because of the division of authority between himself and Roberval. In 1598 an attempt of the Marquis de la Roche to settle two shiploads of "jail-birds" on Sable Island in the St. Lawrence met disaster. To the south in the Carolina-Georgia region the attempts of the Huguenot leaders—Admiral Coligny, John Ribault, and Laudonnière—also failed chiefly through lack of support from home and the greater power and skill of Menendez and the Spaniards in the near-by region. Dominique de Gourgues later on, 1568, took bloody vengeance for the Spanish atrocities, but was too weak to maintain himself and soon sailed for home.

Although the sixteenth century closed without any permanent settlements in the new world, except the Spanish, both French and English settlements came in the early part of the seventeenth century. France led with Port Royal in 1604 and followed with Quebec in 1608, one year after Jamestown. From the beginning of the seventeenth century to 1663 French colonization was in the hands of the prevalent commercial companies, the last known as the Hundred Associates. After 1663 the crown took over the administration, giving a highly absolute and centralized government. Richelieu in the charter of the Hundred Associates established an order of nobility. Seignories were granted to members of the lesser nobility along lake and river fronts. The tenant paid a trifling rent, worked a certain number of days per year, patronized the lord's

grist mill, and gave him one fish out of every eleven caught. With the exception of a little liberality at the beginning of the seventeenth century the colonies were reserved to the Catholics and the government was exceedingly paternalistic. Says Professor D. S. Muzzey in a striking sentence: "They were directed by the government not only what taxes to pay, with what ports to trade, what laws to obey, what worship to perform, but what tools to use, what seeds to plant, at what age to marry, and how large families to bring up."[1] Such minute direction might have promoted military efficiency, but it failed to attract settlers.

The father of New France was Samuel de Champlain, antagonizer of the Iroquois, pioneer leader of western exploration, discoverer of Lakes Champlain, Ontario, and Huron, explorer of the Ottawa Valley, and sender of Jean Nicolet to the outlet of Lake Superior in 1634. Other explorers trod the ranges of the upper Mississippi Valley and the frozen wastes of the Hudson Bay region, and in 1671 St. Lusson, at the Sault Ste. Marie, claimed the whole Northwest in the name of his sovereign, Louis XIV. At the close of the seventeenth century, however, the French in Canada barely numbered eighteen thousand, whereas the English colonies had advanced to more than a quarter of a million. The main French settlements—Quebec, Three Rivers, and Montreal—were located on the St. Lawrence at intervals of some ninety miles. Agriculture was carried on only in the neighborhood of the forts which protected the settlers from Indians, though little protection was needed because the French adopted Indian customs and intermarried with the Indians. Discontented with the region of the St. Lawrence, the Great Lakes, and Hudson Bay, the French pushed onward to the waters of the mighty Mississippi. From Lake Michigan by way of the Fox and Wisconsin rivers Jacques Marquette and Louis Joliet made their way to the Mississippi in 1673, accompanied by five other Frenchmen, and floated down its turbulent waters to the neighborhood of the Arkansas; the return trip was

[1] *American History* [Ginn and Company, Boston, 1911] 85.

made in part by way of the Illinois River and Lake Michigan. Nine years later, Robert Cavelier de la Salle, after obstacles which would have killed most men, descended the river and with imposing ceremony took possession of the territory drained by it. Says Francis Parkman:

> On that day, the realm of France received on parchment a stupendous accession. The fertile plains of Texas; the vast basin of the Mississippi, from its frozen northern springs to the sultry borders of the Gulf; from the woody ridges of the Alleghanies to the bare peaks of the Rocky Mountains,—a region of savannas and forests, suncracked deserts, and grassy prairies, watered by a thousand rivers, ranged by a thousand warlike tribes, passed beneath the scepter of the Sultan of Versailles; and all by virtue of a feeble human voice, inaudible at half a mile.[2]

Settlements in the western territory came slowly. Iberville founded Biloxi in 1699, which was later moved to the Mobile region, and in 1718 Bienville founded New Orleans which soon became the metropolis. Crozat, who received a monopoly of trade, mining, land grants, and slavery in Louisiana for twelve years in 1712 and who opened lead mines as far north as Missouri, surrendered his monopoly to John Law's Company of the West in 1717. Natchitoches, near the Red River, was founded in the same year. To the north, likewise, settlements were being made: Cahokia, and Kaskaskia, Illinois, in 1699 and 1700; Detroit, Michigan, in 1701; Vincennes, Indiana, in 1732; and St. Louis, Missouri, in 1764. English and Spanish rivalry, nevertheless, coupled with French methods of settlement and Indian opposition prevented the country from being effectually settled, and hence Louisiana was a vast territory with little over thirteen thousand people in 1769. It was garrisoned by scattered forts which protected the small villages and adjacent farming communities.

English Explorers.—More important for our purposes than Portuguese, Spanish, or French explorations were the English. First in point of time were John and Sebastian Cabot, father and son, who in 1497 reached the coast of

[2] *La Salle and the Discovery of the Great West* [Little, Brown and Company, Boston, 1897] 308.

Labrador and followed it south for three hundred leagues. Their reward is indicated in Henry VII's methodical account book: "To hym that found the new isle 10£." In 1498 Sebastian Cabot unavailingly sought the northwest passage; later, in the service of the king of Spain, he led an expedition to the southwest and reached the La Plata and Parana; and, once more in England, he served as president of the company which in 1553 sent Hugh Willoughby to his death in the search for a northeast passage and Richard Chancellor to glory at Archangel. In the meantime, other expeditions were dispatched from Bristol and Plymouth to the new world. Martin Frobisher made three voyages, 1576, 1577, and 1578, and John Davis made three, 1585, 1586, 1587; both explorers, like many others, have left their names in Canadian geography. Better known than either Frobisher or Davis were Sir John Hawkins, the noted slaver and robber of Spanish domains, and Sir Francis Drake, the despoiler of Spanish treasure ships and the first English circumnavigator of the globe. Drake's voyage was made in 1577-1580, an exploit repeated by Thomas Cavendish about six years later. Of higher moral caliber than any explorers yet noted was the gallant Sir Humphrey Gilbert, who scorned the ill-gotten gains of piracy, and went down with his faithful men in the ten-ton *Squirrel,* which he refused to desert for a larger vessel, the *Golden Hind,* 1583. When last seen and heard by the survivors he sat on the deck of his vessel with an open Bible in his lap and called out: "We are as neere to heaven by sea as by land." Sir Walter Raleigh, his half-brother, took up his uncompleted work, though he turned his efforts from the bleak Newfoundland coasts to the more hospitable shores of the Chesapeake and the present Carolinas. Even there, the efforts of Arthur Barlow, Philip Amidas, Ralph Lane, John White, Samuel Mace, and others failed to bear permanent fruit. Sir Walter Raleigh, notwithstanding his failures and his execution upon trumped-up charges, is really entitled to the name of father of North American colonization, for he was the first to fix upon Chesapeake Bay as the proper region of settlement.

English Methods of Settlement.—England, as did most other nations, made use of trading companies which enjoyed trade monopoly, brought together considerable capital, exercised large political powers, and obtained a territorial foothold in designated regions. The early English companies were for the most part regulated companies. Merchants desiring to trade with a given region paid entrance fees and promised to obey the regulations of the company which had a monopoly in that region. Each man traded with his own capital and kept his own profits or suffered his own losses. But traders tended to withdraw in hard times and thus resources were lessened when they were most needed. The great need was to obtain a permanent capital from a large number of people and to turn its management over to a few efficient men. The joint stock company was the answer. Early forms of this type were found in Italy, but north of the Alps the joint stock company did not develop until after the founding of the Dutch and English East India companies about the beginning of the seventeenth century. In our history the most important of the joint stock companies were the London and Plymouth companies, the first of which was authorized to make settlements between the thirty-fourth and thirty-eighth parallels and the second between the forty-first and the forty-fifth. The intervening territory was open to each on condition that neither made a settlement within a hundred miles of the other.

In the occupation of the various English colonies other methods of settlement were used, namely, migrating groups from the colonies and wealthy proprietors, as will be noted in more detail presently, but here we may notice the method by which each was settled. Virginia was founded by the London Company and Plymouth by the Separatists who eventually obtained a charter from the London Company and financial aid from seventy London merchants who were bought out about seven years later. Unlike the Virginia settlers who were mere servants of the company, the Plymouth colonists were stockholders in the company and shared in the profits. Massachusetts was founded by

the Puritans of the Massachusetts Bay Company. Maine and New Hampshire were settled in part by English emigrants under the protection of Sir Fernando Gorges and Captain John Mason, but also partially by settlers from Massachusetts, which, moreover, contributed to the settlement of Rhode Island and Connecticut. Under the proprietary system a single individual or a group was granted land by the king, under such conditions at first as to make the proprietor a feudal lord. Gorges and Mason received such grants, but the best known examples are Pennsylvania and Maryland, the first going to Penn and the second to the Calverts. New York for a while, 1665-1685 (except for 1673-1674 when it was reoccupied by the Dutch) was a proprietary colony of the Duke of York. That generous individual handed over New Jersey as a proprietary colony to his friends, Sir George Carteret and Sir John Berkeley, and in 1682 sold Delaware to Penn. The Carolinas were occupied by Virginia settlers, but the region was soon given to eight proprietors, nobles, of whom Anthony Ashley Cooper, soon to be Earl of Shaftesbury, was the most important. Georgia was granted to a group of trustees for a period of twenty years, but actual settlement was made by James Oglethorpe. In 1775 only two colonies—Rhode Island and Connecticut—were self-governing, that is, elected their own officers, and only three—Maryland, Pennsylvania, and Delaware—were proprietary. The remainder were royal colonies, with governors appointed by the king. This change to royal colonies was due in part to the incompetence of governors, the European wars, and the need for protection against the French, but especially to the desire to control colonial trade and manufactures to the profit of the English sovereign.

Southern Colonies.—Having noted the English methods of settlement, we shall take up somewhat in detail the various groups of colonies. The first settlement of a permanent nature was made at Jamestown in 1607. Despite the bitter disillusionment of fool's gold, the stern rule of John Smith, the starving time following his return to England, the opportune arrival of Lord Delaware with

reënforcements, and the harsh rule of Sir Thomas Dale, 1611-1616, the colony persisted, and by 1619 its future prosperity seemed assured. In that notable year the commercial exportation of tobacco commenced, African slavery was introduced, representative government began, and ninety "young maidens," realistically portrayed in Mary E. Johnston's *To Have and To Hold,* were brought over and sold to the settlers as wives for the cost of their transportation, namely, about one hundred pounds of tobacco. Three years later an Indian massacre retarded settlement, but in 1624 it became a royal colony, and thereafter progress continued rapid.

The next southern colony was Maryland, founded in 1634 as a Catholic settlement by Cecilius Calvert, son of George Calvert, who had obtained the charter two years earlier. The settlers and their descendants were to "enjoy the rights and privileges of native born Englishmen," be exempt from English taxation, and have laws made "by the proprietor and the freemen of the colony." Boundary disputes with Claiborne over Kent Island and trouble with freemen over the interpretation of the charter as well as religious disputes marred the early history of the colony. When the Protestants refused the religious toleration the Catholics had allowed them in the early days of the colony, Baltimore, to protect his own followers, persuaded the legislature, in 1649, to pass a law granting religious toleration to all persons "professing to believe in Jesus Christ" and by 1658 the religious wars had subsided. In 1689 the Baltimores lost their proprietorship, but when they accepted Protestantism it was restored to them in 1715 and remained in their possession until the Revolution.

Charles II's grant of land between Virginia and Florida and west to the Pacific to eight nobles in 1663 led, in spite of the attempted feudal hierarchy of John Locke's "Grand Model," to the colonies of North and South Carolina, the former on the Chowan River and the latter on the Ashley, though the colonies were not provided with separate governors until 1711. The government was inefficient, and constant wrangling occurred, especially in North Carolina,

which became a sanctuary of runaways, where, as critical Virginians said, "everyone did what was right in his own eyes, paying tribute neither to God nor to Caesar." The jealous Spaniards encouraged Indian depredations, pirates destroyed the commerce, and debts led the assembly to offer public lands for sale, an action vetoed by the proprietors. The North Carolina assembly then asked to be made a royal colony, 1719. Ten years later the proprietors sold their rights in both colonies to the king for fifty thousand pounds, and South Carolina became a royal colony.

The youngest of all the colonies, Georgia, received its charter in 1732. General James Oglethorpe wanted to found a colony to give England's unfortunate debtors a new chance in life, but other motives such as a desire to convert the Indians, to obtain the profits of silk and wine cultivation, to provide a buffer colony for the Carolinas, and to curb the expansion of Spain should be noted. The unsatisfactory division of the land and the prohibition of the importation of rum and slaves by the trustees caused early difficulties, but the people eventually compelled the proprietors to yield. In 1752 the trustees surrendered the colony to the king. Its founder was still alive when independence was won.

New England Colonies.—In New England early explorations were made by Bartholomew Gosnold (1602), Martin Pring (1603), and George Weymouth (1605). The cold Popham Colony at the mouth of the Kennebec was founded in 1607, but soon froze out. The earliest permanent settlement was made by the *Mayflower* Pilgrims, who fled first from religious persecution in England, and, secondly, from Dutch customs, language and life in Holland, and reached Plymouth in 1620, on a day when, as usual, "the breaking waves dashed high on a stern and rockbound coast." In spite of the severity of the winter of 1620-1621 they persisted and suffered, enduring the pangs of hunger then and later the ravages of King Philip's War, 1675-1676, until at last they were absorbed by the more populous Massachusetts Bay Colony in 1691. The latter really began in 1628 when John Endicott established the first group of

settlers at Salem, but two years later when John Winthrop arrived with a large body of colonists the colony moved to Shawmut, rechristened Boston. Although many people believe that the Puritans came here for religious freedom, their history abundantly proves, as witnessed by the persecution of Roger Williams, Anna Hutchinson, the Quakers, and others that they merely wanted a place where they could control the forms of worship. Massachusetts prospered, and though it became a royal colony in 1684 and suffered under Andros, the charter granted in 1691 by King William remained in force until the Revolution.

Gorges eventually, 1639, secured a charter for Maine, but his heirs sold their claims to Massachusetts for £1250 in 1677 and Maine remained a part of that colony and state until 1820. John Mason had settled New Hampshire, but the region was claimed by Massachusetts under her charter of 1629 and actually annexed in 1641-1643. In 1679, however, Charles II made New Hampshire a royal colony and separated it from Massachusetts.

By immigration from the "Bay Colony" Rhode Island and Connecticut were founded. The name of Roger Williams is irrevocably attached to the former. As a friend of the Indians and of liberality in church and state he incurred the enmity of the authorities and in 1636 fled to the head of Narragansett Bay, where he bought a tract of land from the Indians and founded Providence. He granted democratic government, used paper ballots, and allowed complete religious freedom. Although the colony was kept out of the New England Confederation in 1643 because of the opposition of Massachusetts, a charter was secured twenty years later and its future became secure. In the same year that Williams founded Rhode Island, Thomas Hooker led a band of settlers to the Connecticut River region and in a short while Windsor, Hartford, and Wethersfield became thriving settlements. In 1639 the famous "Fundamental Constitutions" appeared; church membership was not required for the suffrage. After the defeat of the Pequot Indians in 1637 the colony prospered, though it was not officially recognized by England until a

quarter of a century later. In that same year, 1662, New Haven, a colony settled by John Davenport in 1638 because he detested the strife-charged air of Massachusetts in which he had intended to settle his congregation, was included in the Connecticut charter and was forced to yield after three years of opposition.

Middle Colonies.—As a result of the exploration of Henry Hudson, an Englishman in the service of Holland, in 1614, about five years after the discovery of the river, trading posts were founded on Manhattan Island and a short distance south of the present Albany in New Amsterdam or New York, the first of the Middle Colonies. Because of the patroon system, the early monopolistic policy, the interest in furs, land quarrels, the lack of support from home, and the claims and jealousies of the English, the colony failed to prosper and in 1664 it was captured by the English, who, save for a very brief period, 1673-1674, retained control. Not until 1683 did New York receive an assembly; three years later James II tried to consolidate New York, New Jersey, and New England into the Dominion of New England under Sir Edmund Andros. The expulsion of Andros, the quarrels of Governor Nicholson and Jacob Leisler, the intemperance of Governor Sloughter, Peter Zenger and the liberty of the press, and the assembly limitation on appropriations may be read in political histories.

One of the smaller Middle Colonies, too, was founded by the Dutch in 1617, for, anxious to open the fur trade, they built a fort at Bergen and six years later another on the Delaware almost opposite Philadelphia. This region went to the English when New York was taken, and Lord Berkeley and Sir George Carteret, the latter of whom had been governor of the island of Jersey, divided the territory. Ten years later the Quakers purchased West Jersey, Berkeley's share, and in 1682 Penn and his associates bought East Jersey for thirty-four hundred pounds from Carteret's heirs. Six years later New Jersey was joined to New York, and remained under its governor until 1738, though it had become a royal colony in 1702.

A new element, the Swedish, appeared in the settlement of Delaware, for in 1638 Governor Peter Minuit led a colony to Christiana, the site of the present Wilmington. Inadequately supported by the home government, the colony fell to the Dutch in 1655 and then to the English nine years later. In 1682 Penn purchased the colony from the Duke of York and annexed it to Pennsylvania, only to have it receive, nine years later, a separate governor and in 1702 an assembly.

The most important of the Middle Colonies grew out of the anxiety of William Penn to provide a place of refuge for the oppressed Quakers through collection of a debt of sixteen thousand pounds which Charles II owed his father, Admiral Penn, and also out of the English ruler's willingness to appear honest at little cost to himself. In spite of confusing language, boundary disputes, and a less liberal charter than that of Maryland, for the crown claimed a veto of colonial laws for five years and Parliament the right of taxation, Pennsylvania thrived with numerous Protestant colonists drawn from northern Ireland and the German Rhine. Philadelphia, laid out in 1683, soon surpassed New York as a commercial center. Friendly relations with the Indians, humane treatment of prisoners, and protest against slavery, 1688, marked Pennsylvania as one of the most enlightened of the colonies. When Penn's hand was removed in 1712, disputes and wranglings over taxes, land, trade, defense, etc., arose between the governor and the assembly, but the colony remained in the hands of Penn's descendants until the Revolution.

Struggle for Supremacy.—As exploration and colonization advanced, disputes inevitably arose over the claims, but those already noted for the Swedish and Dutch with the English did not have the far-reaching importance of the English and French. Early English rulers had some respect for the claims of the French, but the later ones did not. Port Royal, Acadia (Nova Scotia) was claimed by the English and from 1613 to 1710 seven different expeditions were sent against it. The French likewise desired

English soil, especially New York and the Hudson River Valley which would give them an ice-free entrance to Canada.

The first three struggles—King William's War, 1689-1697, Queen Anne's War, 1701-1713, and King George's War, 1744-1748—were simply side issues of the War of the League of Augsburg, the War of the Spanish Succession, and the War of the Austrian Succession, the first two of which had their roots in the power and overbearing insolence of Louis XIV and the third in the theft of Silesia from Maria Theresa by the perjured Frederick the Great, though "Jenkin's ear" (1739) had already embroiled Spain and England. So, too, the Seven Years' War, 1756-1763, though it began in the colonies first in 1754 as the French and Indian War, goes back to the act of Frederick. Through all, however, ran commercial and economic aspirations and jealousies. But it is not our purpose to draw the pictures of a Louis XIV's glory and shame, or the military victories of a Marlborough, or the treachery and gallantry of a Frederick; nor is it our purpose to discuss the treaties of Ryswick, Utrecht, or Aix-la-Chapelle as they affected Europe, though the second covered England with glory. Rather it is our purpose to note affairs in the new world, though it must ever be kept in mind that between 1688 and 1815 England and France fought seven wars covering sixty-eight years and that fighting occurred wherever their possessions touched, with France growing ever weaker, in spite of the founding of twenty-two commercial companies, 1599-1642, the partial recovery from the religious wars, and the apparent splendor of Louis XIV, great by virtue of being king of beggars, one-tenth of his subjects being dependents and over half too poor to give alms. Louis XIV, in fact, was the cause of France's decline.

Governor Frontenac of Canada failed in his efforts to seize New York, but his savage raiders inflicted terrible damage at Dover, New Hampshire, Schenectady, New York, and Haverhill, Massachusetts. Sir William Phips of Maine, however, succeeded in capturing Port Royal and in carry-

ing away numerous articles, among them the governor's silver spoons, and new dress wigs, but he failed in an attempt to seize Quebec, and Port Royal was given back to the French in 1697. The second war was likewise marked by Indian attacks on the Maine coast all the way from Casco to Wells and elsewhere, as Deerfield, Massachusetts; an English expedition took permanent possession of Port Royal in 1710 and its name was changed to Annapolis. The Treaty of Utrecht gave England the Hudson Bay region, Newfoundland, and Acadia, whose name was soon changed to Nova Scotia. In the third war the only notable colonial exploit was the capture of Louisburg on Cape Breton Island by William Pepperell's New England troops in 1745. When this fortress was returned to France at the close of the war, the New England yeomen grew bitter toward the mother country, which, they believed, underestimated their sacrifices.

Prior to the discussion of the decisive conflict we might note the awakening interest of the English in western expansion, as evidenced by Governors Bellomont of New York, Keith of Pennsylvania, and Spotswood of Virginia and the increased activities of the French in the signs of Celoron de Bienville in the Ohio region in 1749, which were followed the next year by those of Christopher Gist for the Ohio Company. Moreover, we should compare the relative strength of the two combatants in America. The French were Catholic, had an absolute paternalistic government, and were accustomed to following instructions implicitly; the English were predominantly Protestant, self-governing, and capable of acting on their own initiative. The French were traders and hunters with the plow and harrow probably scarcer than the canoe and musket; the English, on the other hand, were farmers and wanted to develop a permanent agricultural life. New France had neither printing presses nor public schools, whereas the English colonists had set up a printing press as early as 1639, had eleven newspapers by 1740, started public schools almost with their settlement and had six colleges by 1754. The French, however, had two big advantages which helped

them, especially in the early stages of the conflict, namely, fighting on the defensive and their absolute unified government. Without the long debates which marked Franklin's wise Albany Plan or disposition of troops or the bad feeling between English and colonial officers, France could hurl her forces at a given point.

War began in America soon after Governor Dinwiddie sent George Washington to warn the French to keep off British territory and a little later he was forced to surrender at Fort Necessity which he had built near Fort Duquesne. The next year, 1755, the ill-fated and stubborn Braddock was ambushed when he set out for Fort Duquesne and only the bravery of Washington and his Virginians prevented annihilation of the forces. But the English spirit rose with defeat and the tide soon turned, Quebec being taken in 1759 and Montreal in 1760. During the next two years England seized the rich sugar islands of the West Indies and Havana and Manila from France, and her ally, Spain. By the Treaty of Paris of 1763 France ceded her possessions west of the Mississippi to her ally, Spain, and those east to England with the exception of some of the West India islands and St. Pierre and Miquelon on the Newfoundland coast, the last two being kept for fishing purposes but not for fortifications.

Thus, except for a temporary revival in the early nineteenth century France's dreams of a colonial empire in America vanished and English institutions and ideas came slowly into vogue in Canada. But the West India islands were capable of rapid economic development and sugar produced by slave labor proved a veritable gold mine, enabling France for a while to dominate the European market.

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CHAPTER II

TERRITORIAL EXPANSION OF THE UNITED STATES

General Causes of the Revolutionary War.—Causes had long been operating to make the relations between the mother country and colonies more strained, and the great distance between parent and children fanned the love of independence. Restrictions on commerce and manufactures, with the suppression of the Massachusetts Land Bank, the prohibition of paper money and western expansion, the veto of colonial laws, as those attempting to restrict slavery, and taxation, all combined to give the colonies an insupportable burden, as they believed, especially so after the general writs of assistance, authorizing search of premises where law violations were suspected, interfered materially with smuggling. Then, too, economic depression added fuel to the flames of opposition.

Mercantilism.—Under the prevalent doctrine of mercantilism, or state-making, England tried to develop her own navy and commerce, manufactures, and agriculture, and accumulate large amounts of the precious metals. The chief provision of the Navigation Act of 1651 affecting the colonies was that goods grown or produced in Asia, Africa, or America must be carried to England or its possessions in English or colonial vessels. Later acts strengthened this act and also introduced new provisions. The Act of 1660 enumerated certain articles which England could not produce or could not produce in sufficient abundance and required that they be sent to England, thus lowering the price for some of them. Among the articles included at one time or another were tobacco, molasses, rice, naval stores, hides, copper, iron, pot and pearl ashes, and lumber. Products competing with English farmers were generally

excluded from England by high tariff duties and thus were compelled to find markets elsewhere. The Act of 1663 required with some exceptions—salt for the fisheries, native wines from Madeira and the Azores, and home foods, servants, and horses from Scotland and Ireland—that goods purchased by the colonists come from or through England, thus, in some instances, causing higher prices. Laws in 1673 and 1696 were intended to make the earlier legislation more effective. But more harmful to the colonies than commercial legislation, for shipbuilding was actually stimulated thereby, were the restrictions on manufactures. England wanted to keep her colonies sources of raw materials and markets for manufactured goods, thus developing her own manufactures. In 1699, therefore, she forbade any colony to export woolen yarn, woolen cloth, or any woolen manufactures to any other colony or to a foreign country. A similar prohibition was applied to the exportation of hats from one colony to another in 1732. In 1750 Parliament under a penalty of two hundred pounds forbade the erection of slitting or rolling mills, plating forges, and steel furnaces, but encouraged the production of pig iron and bar iron by allowing them to enter London duty free and, after 1757, any port in the country.

England also aroused much discontent, as noted elsewhere, through the suppression of the Massachusetts Land Bank and the prohibition of paper money. The mother country desired to get and keep as much of the precious metals as possible and to keep all bad money out of the country. The Massachusetts Land Bank was exceptionally unsafe, for its bank notes had no effective security. But the suppression of the bank in 1741 rankled and was a factor in the revolution a quarter of a century later. In 1751 Parliament prohibited, save for war and great emergencies, paper money in the four New England colonies, where the evils were greatest, and thirteen years later enacted a more drastic prohibition applying to all of the colonies, though treasury notes, not legal tender, might still be issued for short periods anticipatory to taxes. This prohibition, coming at a time when the inflow of coin from

the Foreign West Indies was restricted, formed an important cause of the Revolutionary War.

Attempted Restriction of Western Settlements.—Years before 1775 hardy pioneers were occasionally pushing to the west, but some English interests viewed this movement with concern, for thereby the Indians might be antagonized and the fur trade decreased. The Royal Proclamation of 1763, therefore, forbade settlements to the west of the Appalachians or upon lands to which the Indians had valid claims. And in spite of noisy colonial complaints this policy was followed. But Daniel Boone came to Kentucky as early as 1769 and within the next three years James Robertson and John Sevier had settlements in the Watauga Valley.

Attempted Taxation.—Among the specific acts which aroused intense colonial opposition were: the Molasses Act, the Sugar Act, the Stamp Act, the Townshend Acts, the Intolerable Acts, and the Quebec Act. In 1733, Parliament, moved by the desire to force the colonies to buy from the English West Indies rather than from the Foreign West Indies where prices were frequently lower, imposed a duty of nine pence a gallon on rum, six pence a gallon on molasses, and five shillings a hundred weight on sugar brought from the non-English West Indies. The laws were unenforced and smuggling was common. But in 1764 by the Sugar Act Parliament forbade the importation of rum from the Foreign West Indies, left the duty on raw sugar at the old rate but increased that on the refined article to twenty-two shillings, and reduced that on molasses from six pence a gallon to three. Two years later the duty on molasses was reduced to one penny a gallon and that rate was levied on all molasses.

In 1765 the Stamp Act levied a tax on wills, deeds, mortgages, notes, college diplomas, newspapers, pamphlets, and all official and public documents. Rioting, the Stamp Act Congress, and non-importation agreements, or the refusal to buy English products, led to the repeal of the measure in 1766. The colonists in their joy over repeal overlooked the declaratory clause, which asserted the right

of Parliament to tax the colonists. But the next year they felt its application in the Townshend Acts, which provided for trial of revenue cases in America without jury, declared general writs of assistance legal, provided for commissioners of customs to reside in American ports, suspended the legislature of New York for failure to provide for British troops, and levied duties on tea, glass, wine, oil, paper, and painters' colors imported into the colonies. Another non-importation agreement in 1769 and changes in English politics led to the repeal of most duties, with the notable exception of tea. Still, the duty was only three pence and George III prevailed upon Parliament to repeal the heavy duty in England. The colonists could, therefore, buy tea, after paying the colonial duty, for a lower price than they were giving for the tea smuggled in from Holland. But the colonists did not relish sugar-coated pills. And so the tea consigned to Philadelphia, New York, Boston, Annapolis, and Charleston was either sent back home or destroyed. At Boston 342 chests of tea, worth about fifty thousand dollars, were dumped into Boston Harbor, December 16, 1773.

Intolerable Acts.—Whigs now joined with Tories to punish Boston, for one of their most sacred rights, private property, had been violated. The Boston Port Bill closed the harbor to external commerce and moved the customs house to Salem. The Regulating Act prohibited town meetings without the governor's consent, save for the election of regular officers, increased the power of the royal officials, and set up the doctrine that a charter granted by the Crown could be altered at will by Parliament. The Administration of Justice Act allowed the trial of colonials for capital crime in England and assured to British officers and soldiers who had made themselves liable to Massachusetts law, as in the Boston Massacre, a trial in the home country or Nova Scotia.

The fourth of the Intolerable Acts of 1774 was the Quartering Act which provided for the quartering of troops on the colonies, chiefly Massachusetts, and authorized the governor to designate public buildings to be used as bar-

racks by the troops. Ten years earlier such an act had caused difficulty, for the burden was unfairly distributed and friction was invited. In Massachusetts on March 5, 1770, an unruly crowd had assaulted a soldier on sentry duty. Reënforcements came for the soldier and for the crowd and resulted in the so-called "Boston Massacre." The troops were sent away at the time in order to avoid war, for Governor Hutchinson could not deny Samuel Adams' words: "There are three thousand people yonder at the town meeting and the country is rising; night is coming on, and we must have our answer." Another quartering act thus poured oil on the still glowing coals of 1770.

Closely related to the Intolerable Acts was the Quebec Act intended to lessen discontent in Canada by allowing judgment under the old French civil law and by guaranteeing freedom of worship. But it struck a blow at the land claims of Massachusetts, Connecticut, New York, and Virginia by annexing the territory between the Ohio and Mississippi rivers and Great Lakes to Canada.

Smuggling.—Armed opposition to England had been in the air for some time. In 1768 a mob of Bostonians abused customs officials who had seized Hancock's sloop, *Liberty*, for law violations. Four years later smugglers, or their sympathizers, burned the *Gaspee* off the coast of Rhode Island because its officer had been especially zealous in enforcing the law. According to D. A. Wells nine-tenths of the colonial merchants and one-fourth of the signers of the Declaration of Independence were smugglers. The fiery speeches of James Otis and Patrick Henry and the work of the committees of correspondence prepared the way for armed resistance.

The Final Break.—With the colonists already in the mood for rebellion, sincere in the belief that they were taxed without representation, and utterly immune from the suggestion that other English subjects were as truly unrepresented as they, drastic action was unavoidable. The First Continental Congress meeting at Philadelphia, September 5, 1774, and representing all of the colonies save

Georgia, where the Tory governor had blocked the way, drew up a Declaration of Rights and Grievances, a petition to the king, and the American Association. The first asserted the rights of Englishmen and condemned eleven specific acts of Parliament. The second petitioned the king to right their wrongs and the third provided another suspension of commerce, forbidding importations from England after December 1, 1774, the importation of slaves after December 1, 1775, and the exportation of all products except tobacco and rice to Great Britain, Ireland, and the West Indies after September 10, 1775. The English Parliament paid little heed to the pleas of Pitt, Fox, and Burke for reconciliation. A few changes in taxation were made, but the Continental Congress rejected them because Parliament did not renounce "the pretended right to tax us." Parliament, moreover, cut off New England and a little later all colonies except Georgia, which had refused to accept the boycott provisions, from all trade save with the British Isles and the British West Indies. It also forbade the New Englanders to fish along any part of the North American coast.

Driven to revolt by the rejection of their requests, the colonists resorted to arms. Then came the well-known war for independence lasting from 1775 to 1783. The struggle raged with varying fortunes between a loosely organized confederacy and a powerful nation which, however, had to transport all its men and supplies across two thousand miles of water, by sailing vessels. The aid of France, granted after Saratoga and especially effective at Yorktown in 1781, eventually turned the tide in favor of the colonists.

Acquisitions of Territory.—The Treaty of Paris in 1783 gave American independence and an area of nearly nine hundred thousand square miles counting the drainage basin of the Red River of the North, not included in any accession. Since that date our contiguous territory has been increased to over three million square miles and our noncontiguous territory to nearly a fourth as much. The original territory was settled, and Louisiana, Florida, Texas, the Oregon claim in part, the Mexican Cession, Gadsden

Purchase, Alaska, the Philippine Islands, the Hawaiian Islands, Porto Rico, Guam, Samoa, Tutuila, the Panama Canal Zone, and the Danish West Indies have been added. It is with the story of these acquisitions that we are interested in this chapter, though we must also consider their settlement as well as that of the territory between the Appalachians and the Mississippi.

Early Settlements or Acquisitions.—Daniel Boone and other hardy pioneers had pushed across the Appalachians prior to and during the Revolutionary War in spite of the king's proclamation, the dangers from Indians, and the harshness of frontier conditions. Settlements were first made south of the Ohio, and in 1792 Kentucky was admitted as a state and four years later Tennessee. The first settlement in Ohio was made at Marietta in July, 1788, but not until 1803 did Ohio enter the union. And in that same year the vast stretch of Louisiana, about the size of the original territory and from which fourteen states have since been carved in whole or in part, was added.

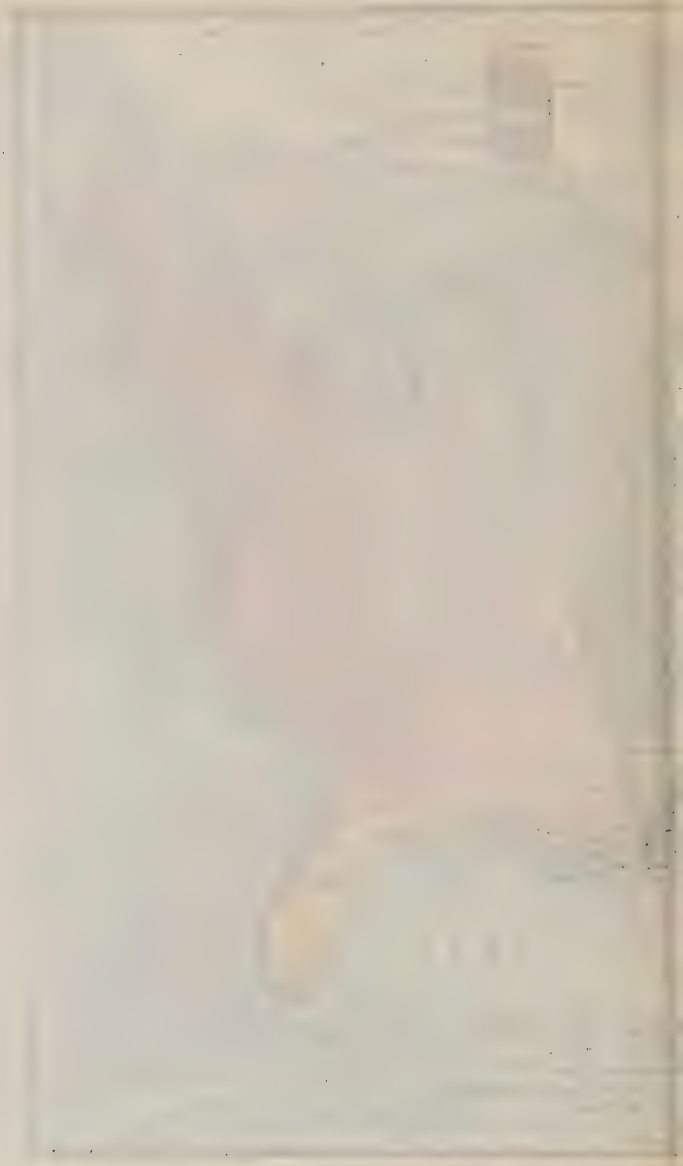
Navigation of Mississippi.—For years the navigation of the Mississippi and the right of deposit at its mouth had been an important question, for the Westerners sent their products to New Orleans and then on to the Atlantic seaboard because of the heavy charges of transportation over the mountains. By the Treaty of Paris England guaranteed to the United States the right of navigation which she had received from Spain, but that action was not binding on Spain and during the troubled period of the Confederation and the early years of Washington's administration the western waters threatened both civil and foreign war. At an opportune time, however, 1795, Thomas Pinckney negotiated a treaty with Spain which gave us the right to navigate fully and freely the Mississippi to the Gulf of Mexico and the further right to transship from river boats to ocean-going vessels at New Orleans or some other port free of duty. In October, 1802, Morales, the Spanish intendant at New Orleans, perhaps acting on instructions from Madrid, withdrew this right, and thus closed the river to a trade which at that time amounted to two-fifths of our

exports. Although the river was reopened, action on the part of Jefferson seemed necessary to prevent civil war, and Napoleon, who had received the region from Spain by the Treaty of San Ildefonso, was approached. With the efforts of our agents—James Monroe, Robert R. Livingston, and Charles Pinckney—we are not intimately concerned; nor in Napoleon's vacillation and changing European politics are we interested. Our interest is, rather, in the broadening offer of Napoleon and the acquisition of the vast territory of some 828,000 square miles. The doubling of our area is more significant than Napoleon's broken faith with Spain or Jefferson's constitutional scruples, or our own boundary dispute with Spain. For approximately $11,250,000, deducting $3,750,000 which went to satisfy American claims, or about two cents an acre, we obtained a territory which now contains about a fifth of our population, though it then held perhaps not more than fifty thousand people.

Effects of Louisiana Purchase.—One of the immediate effects of the purchase was the stimulus applied to western exploration and settlement. Jefferson had long been interested in the West and as early as 1783 he had suggested to George Rogers Clark that he form a party "to explore the country from the Mississippi to California." After the territory had been acquired, he asked Congress for an appropriation of $2,500 "to send intelligent officers with ten or twelve men to explore even to the western ocean" and to study the peoples, botany, geology, and zoology of the region. With Jefferson's private secretary, Meriwether Lewis, in command, and with George Rogers Clark's younger brother, William Clark, as lieutenant, a small expedition of hardy and well-trained men left the mouth of the Missouri in the spring of 1804. The party followed the Missouri to its source, crossed the mountains, and descended the Columbia River to the ocean, which was reached in the summer of the next year. After a winter at the mouth of the Columbia, the expedition returned by much the same route and reached St. Louis, September, 1806. Although Captain Robert Gray had discovered the

125
120
115
110
105
100
45
40
35
30
PACIFIC OCEAN
VANCOUVER I.
Victoria
WASHINGTON
1889
Olympia
Portland
Salem
OREGON
1859
1890
IDAHO
Boise City
MONTANA
1889
Helena
BOUNDARY ESTABLISHED BY TREATY WITH GT.
NORTH DAK
Bismarck
1889
SOUTH DAK
Pierre
Missou
MING
1890
NEBRAS
1867
Cheyenne
Denver
COLORADO
KAN
Sacramento
San Francisco
CALIFORNIA
1850
NEVADA
Carson City
1864
Salt Lake City
UTAH
1896
Los Angeles
San Diego
LOWER CALIFORNIA
G. of Cal.
1912
ARIZONA
Phoenix
Santa Fe
NEW MEXICO
1912
Oklahoma
OK
1845
TEX
Austin
Rio Grande
MEXICO
RUSSIA
Bering Strait
Ceded by Russia
ALASKA
in 1867
Norton Sound
St. Michaels
Yukon Riv.
ST. LAWRENCE I.
BERING SEA
KLONDIKE REGION
Dawson City
NW TERRITORY
Mt. St. Elias
Juneau
Gulf of Alaska
Sitka
BARANOF I.
PRINCE OF WALES I.
ALEUTIAN IS.
Monterey
Ciudad Victoria
Longitude 100 West

l territory of the U.S.
ledged as independent
ritain in 1783
y ceded by original thirteen
o the federal government
boundary of the Louisiana
e as claimed by the U.S.
by Spain in 1819
ry of U.S. established
y of 1819 with Spain
Texas annexed by U.S. in 1845
Oregon country claimed by Gt. Britain until 1846
Mexico cession, 1848
Gadsden Purchase, 1853
Ceded by Russia, 1867
Present state lines
Quebec
Montreal
Ottawa
Toronto
Buffalo
Albany
Montpelier
Concord
Portland
Boston
Providence
Newport
Hartford
New Haven
Long I.
Cleveland
Pittsburg
Harrisburg
Baltimore
Trenton
Dover
Annapolis
Richmond
Norfolk
Lynchburg
Raleigh
Cape Hatteras
Columbia
Charleston
Savannah
Atlanta
Jacksonville
Tallahassee
Perdido R.
New Orleans
Mobile
Montgomery
Jackson
Baton Rouge
Little Rock
Galveston
Jefferson City
St. Louis
Terre Haute
Spring field
Indianapolis
Columbus
Cincinnati
Frankfort
Nashville
Memphis
Des Moines
Madison
St. Paul
Lansing
Detroit
Toronto
Quebec
Montreal
Ottawa
Nassau
BAHAMA ISLANDS
FLORIDA KEYS
DRY TORTUGAS
Habana
Matanzas
Cienfuegos
STRAITS OF FLORIDA
ATLANTIC OCEAN
GULF OF MEXICO
UNITED STATES
SCALE IN STATUTE MILES
0 50 100 200 300 400 500
E: The dates indicate year of admission to the Union
Greenwich



mouth of the Columbia River in 1792, the expedition of Lewis and Clark gave us the best claim to the region, a claim considerably strengthened when John Jacob Astor founded Astoria in 1811.

Another exploring party was at work during the period of Lewis and Clark. Captain Zebulon Pike, in search of the sources of the Mississippi, went several miles beyond the Falls of St. Anthony, but was handicapped by the deep snow. A year later Pike explored the Southwest from the Arkansas to the Rio Grande and fastened his name on Pike's Peak in Colorado.

Florida.—As intimated in a previous topic we inherited a boundary dispute with Spain when we bought Louisiana from France, for with little or no ground we claimed that Florida was a part of the original Louisiana (1682-1763) and had been included in the transfer from Spain to France and by France to the United States. Spain insisted that the transaction of 1803 had nothing to do with the boundaries of French Louisiana, for she had obtained West Florida by the Treaty of Paris in 1783 and had never given it up. The Floridas had long been a reeking ulcer in the side of the United States, for Indians, escaped slaves and criminals, pirates and robbers used it as a base for making raids of pillage and murder into near-by settlements and as an asylum to which they could retreat immune from punishment. In 1810 President Madison ordered the seizure of West Florida as far as the Perdido River and early in the next year Congress authorized the seizure of East Florida as well. But because England objected to the latter especially Madison disavowed the acts of his agents and withdrew the American troops in 1813.

During the War of 1812 England used the Floridas as a base of supplies, Spain even proving unable to prevent the Indians from attacking the citizens of the United States. Monroe finally, December, 1817, ordered Andrew Jackson to follow the Seminole Indians into Spanish territory. Jackson obeyed with alacrity. Moreover, he reduced Gadsden, St. Marks, and Pensacola, and executed two British

subjects who were charged with inciting negroes and Indians to various acts of murder and pillage; by the close of May, 1818, he left Florida a conquered territory.

With Jackson's condemnation by most of the leaders and his defense by John Quincy Adams we are little concerned here, but with Adams's influence on Monroe and the demand that Spain fulfill her treaty obligations or relinquish control of the Floridas we are concerned. Spain, still suffering from the effects of the Napoleonic struggles and with Chile, Argentina, Peru, Venezuela, and New Granada (Colombia) in revolt, was in no condition to maintain order in Florida; hence she ceded the region to the United States when the latter agreed to assume about five million dollars of claims which were due to its citizens for commercial injuries inflicted during the Napoleonic struggles. This treaty, moreover, fixed the western boundary of the Louisiana purchase at a line drawn north from the mouth of the Sabine River to the Red River, which it followed to the hundredth meridian of longitude, then it turned north to the Arkansas River, which it followed to its source, then once more went north to the forty-second parallel of latitude which it followed due west to the Pacific. Florida did not become a state until 1845.

Settlement of Territory.—Before taking up other acquisitions it will be necessary to refer to the development of territory already acquired. By the Ordinance of 1787, which Daniel Webster eulogized so highly, provision had been made for the lands north of the Ohio, and in 1803, as already noted, Ohio entered the union. By 1848 all the other states in this region had been formed: Indiana, Illinois, Michigan, and Wisconsin. To the south, also, new states were being formed, Louisiana, Mississippi, Missouri, and Arkansas all being admitted by 1836.

To reach the new corn, wheat, and cotton lands the Easterners made use of Indian trails or cut roads, or floated down the rivers on crude barges or rafts. On the wagon roads some walked, others rode on horseback, and still others used light wagons or wagons of the Conestoga type, which were drawn by horses, mules, or oxen; the families

went singly or in groups, at times joyfully, at times sorrowfully, at times easily, at times painfully, but on they went to the new home with their scanty belongings and small store of hard-earned cash for the land office. In general, the southern planters had an easier time and better outfit than the Northerners, but many Southerners went on foot and instances are on record where father and son drew a cart, as would horses. Less disagreeable, though more dangerous, was the river travel where, by means of large rafts, hay, horses, cows, pigs, chickens, plows, wagons, farmyard, and home were floated to the new place of abode. In the words of Judge James Hall:

> In this manner these people travel at a slight expense. They bring their own provisions; their raft floats with the current; and honest Jonathan, surrounded with his scolding, grunting, squalling, and neighing dependents, floats to the *point proposed* without leaving his own fireside; and on his arrival there, may step on shore with his house, and commence business, like a certain grave personage, who, on his marriage with a rich widow, said he had "nothing to do but to walk in and hang up his hat."[1]

In the settlement of the western country, according to J. M. Peck, a western missionary and pioneer, three distinct waves of migration were found: first, the pioneers who depended largely on the natural vegetation and their rifles; second, the settlers, who purchased the land, cleared the fields, laid out roads and bridges, and erected log houses; and third, the capitalists or men of enterprise, who erected spacious towns and cities and wore the costliest and most fashionable of clothes. The pioneers were clothed in hunting shirts, waistcoats, and pantaloons of rough stuff, frequently leather; the most characteristic clothing of the women were cotton gowns and sunbonnets. Even yet in some sections of the country examples of the old log houses with their clapboard roofs, puncheon floors, crude clapboard shutters, and wooden hinges and latches may be found. Equally crude were the split-slab tables and chairs, the clapboard shelves, the pewter plates, the hunting knives,

[1] See *Letters from the West* [London, 1828] 87, 88.

the home-made beds, the wooden pins for holding clothes, and the sleeping of men and women, relatives and visitors, in the same room. Mr. Peck gives a vivid picture of a typical frontier home:

> Our landlady having nothing in the shape of a table substituted a box. On this she spread a cloth that might have answered any other purpose than a table cloth. The table furniture was various. For knives two or three hunting knives answered. The plates were broken or melted pewter ones, except a single earthen one with a notch broken out, which with a broken fork, was placed for the "stranger" to use. We could readily have excused the kind old lady for this extra trouble; for being dim sighted in washing, or more strictly in wiping it, she had left the print of her fingers on the upper surface.
>
> The viands now only need description to complete this accurate picture of real squatter life. The rancid bacon when boiled could have been detected by a fœtid atmosphere across the yard had there been one. The snap-beans, as an accompaniment, were not half-boiled. The sour butter milk taken from the churn, where the milk was kept throughout the whole season, as it came from the cow was "no go!" The article on which the traveller made a hearty breakfast, past ten o'clock in the morning, was the corn boiled in fair water.
>
> According to the universal custom among the squatter race, the men ate first, the women followed, and, if the company were numerous, the youngsters and children followed in regular succession.
>
> We give this portraiture as a fair specimen of hundreds of families we found scattered over the extreme settlement in 1818-19.[2]

Although the buildings and life just pictured have been duplicated in our subsequent history and are still known, buildings, furniture, and general conditions of life continued to improve as the country became settled. By 1845, the date of our next acquisition of territory, the region east of the Mississippi was fairly well settled, and travel by means of wagon roads, river and canal, and railroads had begun.

[2] See Babcock, Rufus. *Memoir of John Mason Peck, D. D.* [Philadelphia, 1864] 102, 103.

Oregon Territory.—During the forties the disputed Oregon territory threatened to involve us in grave diplomatic difficulties with the English, who claimed the region on the score of settlements made by the Hudson Bay Company. The United States, it will be recalled, claimed the territory because of Captain Robert Gray's discovery of the mouth of the Columbia River in 1792, the Lewis and Clark Expedition, 1804-1806, the settlement of Astoria by John Jacob Astor in 1811, and later because of the settlements in the Willamette River Valley in the early thirties. As early as 1818 the two claimants signed a treaty whereby they agreed to joint occupation for a period of ten years of the territory west of the Rockies between 42° and 54° 40′, and this agreement, in spite of the demands of Thomas H. Benton and other radicals, was renewed indefinitely in 1829. Fifteen years later, the Democrats seized as their popular slogan for the election: "The reoccupation of Oregon and the reannexation of Texas." So far as Oregon was concerned this cry meant that it was already ours through discovery, settlement, and treaty. The election resulted in victory for the expansionists and President Polk in his first message to Congress, December, 1845, insisted that all of the territory up to 54° 40′, or the southern boundary of Alaska, was ours. Although "Fifty-four forty or fight" became a popular cry, neither the president nor Congress, with Mexican affairs rapidly approaching a crisis subsequent to the annexation of Texas, had any intention of going to war, and after a mutual attempt to throw the humiliation of yielding on the other, the line of the forty-ninth parallel was continued to the sea as the boundary.

Texas.—The campaign slogan of 1844 implied that Texas had really belonged to Louisiana and had been weakly returned to Spain in 1819. Two years after its surrender to Spain Mexico revolted, but the government of the new republic over its outlying possessions was very weak. Texas fretted incessantly under its Mexican yoke and especially so because of the large number of Americans who, attracted by fertile land at a tenth the price paid in

the United States and by the large prospects of gain, had settled in the region. By 1830 twenty thousand Americans had gone to Texas. In that year President Bustamante stopped further immigration from the United States and subjected Texas with her Protestant religion, representative government, and freedom of speech and press to the Catholic officers of the smaller province of Coahuila, an action which made fulfilment of Alexis de Tocqueville's prophecy unavoidable, namely, that Texas would revolt from Mexico. The Texans petitioned Mexico for separation from Coahuila in 1833, but she replied with an army and navy. Three years later, March 2, 1836, Texas declared her independence and drove out the troops. Although Santa Anna defeated the Texans in minor engagements and made his name infamous by such cruel acts as the massacre of 166 Texans at the Alamo, he was vanquished and captured by General Sam Houston at the San Jacinto River, April 21, 1836. The Texas Republic was declared, Houston elected president, and a typical American constitution adopted. Because all of the sixty-eight thousand settlers, save perhaps eighteen thousand, were Americans, legislature and people alike voted for annexation to the United States.

Before Texas had won her independence attempts had been made to purchase the region from Mexico. In 1827 John Quincy Adams had offered a million dollars for the territory, but failed, as did Andrew Jackson in his efforts in 1829 and 1835. When Mexico declined the last offer of five million, Jackson, so his enemies charged, urged his old friend Sam Houston to start the revolution which ended in Texan independence. But even if the charge is true Jackson refused annexation, although Congress had voted to recognize Texan independence. Van Buren, too, was opposed to the admission of Texas to the union. Daniel Webster was secretary of state during the early part of the Harrison-Tyler administration, and so annexation was still opposed. Upshur of Virginia, his successor, favored admission, but the treaty was delayed and Upshur was accidentally killed by a gun explosion on the *Princeton,*

February, 1844. J. C. Calhoun, an ardent annexationist, followed Upshur and after the election of 1844 Congress by joint resolution admitted Texas. Tyler signed the bill three days before Polk assumed office, but formal admission did not take place until late in 1845.

The Mexican War and Its Results.—The Texans greeted this action with acclaim, as did the South generally, but the question soon involved the United States in war with Mexico, which, smarting under the loss of a valuable province and its acquisition by a rival power, insisted on pushing the southern and western boundaries of Texas north and east, a plan to which the United States, insistent on the Rio Grande rather than the Nueces boundary and more western territory, objected. Troops sent to the disputed region by both powers clashed and the war was on. But it was brief, the United States winning every important battle. The Treaty of Guadalupe-Hidalgo, 1848, gave us about 529,000 square miles of territory, but in exchange we paid Mexico about $18,250,000. Five years after the war had closed, to salve our national conscience, so some critics insisted, we made the Gadsden Purchase for ten million dollars and thereby rounded out our boundary south of the Gila River by the acquisition of some thirty thousand square miles of territory.

Summary.—By 1853 all our contiguous territory had thus been acquired. The following table summarizes:

Region	Year	Area in Square Miles	Method
Original Territory	1783	892,135	Treaty of Paris
Louisiana	1803	827,987	Purchase — about $15,000,000
Florida	1819	72,101	Treaty and purchase—about $6,500,000
Texas	1845	389,166	Annexation
Oregon	1846	286,541	Treaty
Mexican	1848	529,189	Treaty and $18,250,000
Gadsden	1853	29,670	Purchase—$10,000,000

Admission of States.—Before considering the acquisition of non-contiguous territory we shall note the westward

movement due to developing transportation facilities, improved machinery, and population growth. This movement, of course, is marked roughly by the admission of states. Florida and Texas entered the union in 1845. And within little more than a dozen years, Iowa, Wisconsin, California, Minnesota, and Oregon followed their example. The admission of California was due to the gold discoveries, and that of the other states in large part to agricultural development.

By 1860, the Mississippi was passed and the second tier of states beyond was entered. The frontier line, which marks off the districts having less than two people to the square mile from those which have more, was likewise pushed forward into central Michigan, Wisconsin, and Minnesota. As a continuous line from north to south it disappeared about 1880, but we still have regions of considerable magnitude with less than two people to the square mile.

In 1861, after a bloody struggle had been stopped by an even bloodier one, Kansas entered the union, and two years later forty-eight union counties in western Virginia broke away and formed the new commonwealth of West Virginia. Nevada's admission, rather premature, 1864, was due to silver discoveries and the need of more votes favorable to the Thirteenth Amendment. Three years later Congress admitted Nebraska over President Johnson's veto and established negro suffrage, though, to be sure, the general western movement due to population growth was a factor. It is, nevertheless, interesting to note that the first four states admitted after 1860, as was the case with most before, were connected with the slavery question.

In 1876 Colorado entered the union as a result of the general westward movement due in this case to the hope for gold discovered in 1852 and to the encouraging hope of the silver prospectors. During the next thirteen years the population of the Dakotas, Montana, and Washington increased and all four territories were admitted as states in 1889. Although gold, or the hope for it, drew people to the Dakotas, copper to Montana, and coal to

Washington, perhaps the main influence was the agricultural and forest resources. The next year, 1890, Idaho and Wyoming entered the union; copper, gold, and silver hopes, together with agricultural and forest wealth had combined to draw adventurous settlers and immigrants to the new territories and had led eventually to statehood. Driven from Ohio, Missouri, and Illinois, because of their extreme views on polygyny, more commonly called polygamy, and their political powers, the Mormons settled in Mexican Utah, 1847, only to come the next year under the jurisdiction of the country from whence they had fled. By hard work and careful irrigation they made the region near the Great Salt Lake "rejoice and blossom as the rose." In 1857 there was a minor civil war when Buchanan appointed Alfred Cumming, a "Gentile," to succeed Brigham Young. Mountain Meadows Massacre occurred in the same year, but twenty years passed before Bishop Lee, one of the leaders, was executed for leading Indians and Mormons against a party of emigrants on their way to California. Feeling remained strong, and not until 1896, after Utah had prohibited polygamy, was it granted statehood.

By the close of the nineteenth century all the territories except three—Oklahoma, New Mexico, and Arizona—had entered the union. Oklahoma, meaning "beautiful land," was the heart of the Indian Territory and was purchased from the Indians in 1889; on April 22, at noon, it was thrown open to settlement and by night fifty thousand people were within its limits. In a few months, Guthrie, its capital, was a thriving city with all the modern improvements, but not until 1907 was the new territory, formed by the union of Oklahoma and Indian territories, admitted to the union. Even though New Mexico was organized as a territory in 1850 and Arizona in 1863, growth was slow. Moreover, the lack of an immediate political urge and the presence of large numbers of Mexicans perhaps delayed admission; hence the two did not enter the union until 1912.

Non-Contiguous Territory—Alaska.—The contiguous territory of the United States was acquired prior to the

Civil War. Large areas of outside territory have since been added, namely, Alaska, the Hawaiian Islands, Guam, Porto Rico, the Philippines, the Tutuila Islands, the Panama Canal Zone, and the Virgin Islands.

During the Civil War Russia, unlike England and France, befriended us, and so, when she asked us to purchase Alaska we turned a favorable ear to her proposals, though the region was apparently valuable for little else than seal fisheries. On March 30, 1867, Secretary Seward made the purchase of nearly 600,000 square miles of territory for $7,200,000 in gold. Although the purchase was ridiculed as "Seward's Folly," a region of ice and snow fit only for polar bears, the wisdom of the secretary's act has been abundantly justified, for the products of agriculture, mining, fishing, and lumbering have repaid the original investment many times.

Hawaiian Islands.—As far back as 1854 the annexation of the Hawaiian Islands to the United States had been proposed. First as missionaries, then as farmers and merchants desirous of exploiting the coffee and sugar plantations our citizens had entered the region. In 1875 some grades of Hawaiian sugar had been allowed to enter the United States free of duty. In the islands Americans had civil and political rights and held responsible offices. In 1893 some of these Americans helped depose Queen Liliuokalani, a bitter anti-American, on the ground that she had attempted "to overthrow the Constitution." John L. Stevens, our minister, helped set up the provisional government by landing troops from the *Boston;* the islands were made an American protectorate; and our flag was floated over the government buildings. Shortly afterwards, February 15, 1893, President Harrison sent the annexation treaty, which provided for the payment of twenty thousand dollars a year to the deposed queen and the assumption of the debt of two million, to the Senate. Because Harrison's term expired before ratification occurred, Cleveland withdrew the treaty from the Senate and sent a special commissioner to the islands. His report led to the lowering of our flags and the offer to replace the deposed

queen on condition that she pardon all Americans who had taken part in the revolt. When she refused, Cleveland dropped the matter. The provisional government had little difficulty in maintaining itself and the lessons of the Spanish American War led to annexation by joint resolution, July, 1898.

Spanish-American War.—For many years the United States had been interested in Cuba, prior to the Civil War the South desiring the region as slave territory. The Civil War ended that agitation, but American capital was interested in the development of Cuba, American sympathy went out to the oppressed Cubans, and Cuban agents in the United States fanned the hatred of Spain, a hatred which could not be concealed after the publication of the stolen correspondence in which the Spanish minister, Señor de Lome, had characterized President McKinley as a "cheap politician who truckled to the masses." A little later it blazed out in all its fury when the *Maine* with two officers and 266 men went to the bottom of Havana Harbor. The blood of thousands, chiefly Spanish, and the exploits of Dewey, Sampson, Schley, Shafter and Roosevelt helped stifle the conflagration. By the peace signed at Paris, December 10, 1898, Spain ceded to the United States Porto Rico, Guam, and the Philippine Islands and agreed to withdraw from Cuba. The Spanish commissioners objected to the discussion of the Philippines in the peace negotiations, but McKinley and his advisers insisted that if we returned the islands to Spain we would surrender them to the cruelties from which we had rescued Cuba, would invite internal dissensions and the interposition of foreign nations, and urged that our growing trade interests in Japan and China necessitated the taking of a strong position in the East. Spain, consequently, reluctantly surrendered the Philippines for an indemnity of about twenty million dollars. Guam was seized as a way station on the route from Hawaii to Manila, and the next year, Wake Island, a low coral reef, was seized as a possible cable station, but Midway Island, a part of the Hawaiian group, was used for that purpose.

Samoan Islands.—The Samoan Islands with their rich verdure, ever-balmy climate and attractive people were occupied by Great Britain, Germany, and the United States under a tripartite agreement, which almost involved the last two powers in war in 1889. Bismarck, the German chancellor, dreaming of a colonial empire in the days when the world had been fairly well partitioned, schemed to oust both the English and the Americans. The German consul raised his national flag over Apia, the chief town, enthroned a new king, declared war on the rightful sovereign, and prepared to shell the towns which resisted. Blaine rushed American ships to Apia and the decks of the opposing vessels were cleared for action on March 16, 1889, when a terrible typhoon capsized or beached the vessels and cooled the ardor of the would-be combatants. On sober second thought Germany yielded to Blaine's firm dispatches and recognized the rights of England and the United States. When the division came in 1898, England having voluntarily withdrawn, Germany received the two larger islands. The United States contented herself with five small islands to the east known as the Tutuila group. The largest island of the same name, about seventeen by five miles in extent, has an excellent crater harbor in Pago Pago which is practically impregnable to attack.

Panama.—One of our smallest but most valuable acquisitions is the Panama Canal Zone. As early as the first discovery of America, projects were broached relative to a canal across the Isthmus of Panama. Galvao, DeGomara, and Champlain made such suggestions, but not until the middle of the nineteenth century did thought become very serious. In 1846, by a treaty with New Granada, or Colombia, we agreed in case of canal or railroad construction across the isthmus to offer the new transportation facilities on equal terms to all nations. After the discovery of gold in California and the admission of that state, the need became more urgent. Cornelius Vanderbilt and other American capitalists attempted to build a railroad, but came into conflict with the British, who were trying to control the coast, and suffered the bombardment of an Atlantic

port which they were using as the eastern terminus. The Clayton-Bulwer Treaty of 1850 settled the difficulties temporarily by providing that both powers should guarantee the neutrality of any canal built, protect any company engaged in that work, and give up attempts at exclusive control, erection of fortifications, and acquisition of colonies in Central America. The French attempt, under Ferdinand de Lesseps, the successful constructor of the Suez Canal, proved a failure. The Spanish-American War with the fourteen thousand-mile voyage of the *Oregon* brought home the immediate need of a canal, and in December, 1901, John Hay, Secretary of State, secured the abrogation of the Clayton-Bulwer Treaty. In the struggle over the Panama and Nicaragua routes, Congress finally voted in favor of the former on condition that the route could be obtained "within a reasonable time."

President Roosevelt had little difficulty in buying out the French Panama Company for $40,000,000, but Colombia rejected the $10,000,000 and the $250,000 yearly rental offered for a narrow strip of land across the isthmus. The next political move which put us in control at Panama sheds no luster on the name of the United States. A revolution to which our state department seems to have been privy took place in Panama on November 3, 1903, and a week later Bunau-Varilla, the representative of the Panama Republic, was in Washington. On November 18 the Hay-Bunau-Varilla Treaty, practically the same as the Hay-Herran Treaty, except that we bought the ten-mile strip outright, was negotiated. With the later tolls dispute with England, amicably settled, by charging the vessels of the United States tolls also, and with the long negotiations finally culminating in the agreement to pay $25,000,000 to Colombia, we are not here interested. Our immediate concern is merely in the acquisition of the important tropical territory.

Virgin Islands.—The completion of the Panama Canal at an expenditure of $400,000,000 and its opening to commerce August 15, 1914, led to the acquisition of strategic islands near its entrance. The United States for some

time had been negotiating with Denmark for the acquisition of its West India possessions, and on March 31, 1917, succeeded in acquiring the Virgin Islands for $25,000,000. The importance attached to these islands is apparent when we note the price per acre for our acquisitions; Alaska cost a little less than 2 cents and Louisiana a little more, the Mexican Cession cost about 4.5 cents, Florida came to about 17, lands bought from Texas to 26, the Philippines to 27, the Gadsden Purchase to 34, and Panama, if the purchase price be placed at $35,000,000, to $125.43. But the Virgin Islands cost more than double the price paid for Panama, or $262.16 an acre, a higher value than that of the Iowa farm land, the highest-priced farm land in the union. Truly it was an exorbitant price to pay for a "bay rum factory." [3]

Summary.—The following table shows, by way of summary, the acquisition of our main non-contiguous territory:

Territory	Date	Area in Square Miles	Method
Alaska	1867	590,884	Purchased from Russia for $7,200,000
Hawaii	1898	6,449	Annexed by treaty
Guam	1899	210	Seized following war with Spain
Porto Rico	1899	3,435	War with Spain
Philippine Islands	1899	115,026	War with Spain and $20,000,000
Samoan Islands (Tutuila Group)	1900	77	Treaty
Panama Canal Zone	1903-04	436	Treaty with Panama—$10,000,000 and indemnity to Colombia—$25,000,000
Virgin Islands	1917	149	Purchase from Denmark for $25,000,000

[3] See Smith, J. R. *North America* [Harcourt, Brace and Company, New York, 1925] 735.

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CHAPTER III

POPULATION GROWTH

Seventeenth Century Growth.—When we think of the 120,000,000 people in continental United States at the present time (1927) we wonder at the marvelous growth in little more than three centuries, a growth slow at first, then rapid, and again slow.

In the days of the struggling Jamestown settlers and the sturdy Pilgrims many people hesitated to flee from ills known to those unknown, for though home conditions were bad, the climate, soil, and resources of the new country were practically unknown. The uncertainties of the new land coupled with the immobility of labor and the rigors of frontier life such as crude clothing, poor buildings, wild animals, savage Indians, apparently trackless forests, the high death rate through exposure and lack of medical skill, the tales of suffering sent home in pessimistic letters or narrated by disappointed settlers, the Parliamentary struggle, the objections of the English government to emigration, the failure to find gold and silver in paying quantities, and the religious intolerance and bigotry in some of the colonies, all operated to keep the rate of population growth low. In 1640, consequently, not more than 25,000 whites were found in British North America, perhaps three-fifths of whom were in New England and most of the remainder in Virginia. Twenty years later the population had trebled, with Virginia and Maryland the greatest gainers, for they then held about half of the total. In 1688 the number of settlers was less than 200,000, according to Bancroft and Dexter, and at the close of the century was, if De Bow is right, in the neighborhood of 262,000, or about the 1920 population of Denver.

In the latter half of the seventeenth century, as just noted, the population increased more rapidly, for climate, soil, and resources became known; the rigors and discomforts of life declined; beasts, forests, and Indians gave less trouble; reports grew more satisfactory; religious toleration developed in a few of the colonies; and farming, fishing, and commerce became sources of affluence if not of wealth.

Eighteenth Century Growth.—Growth in the eighteenth century was rapid, for the abundance of free land removed an economic check to propagation. Children were desired, for they could aid in the home work and when grown could obtain land at small expense near their parents. The cost of living, moreover, was not a handicap, for, in general, money wages were good and prices low, and in the colonial economy a family produced practically everything that it needed for its own use. The natural increase was thus high; so, too, immigration helped out to a minor extent.

Benjamin Franklin, Peter Kalm, and numerous other writers comment on the large size of the American families. The former, writing about the time of the outbreak of the French and Indian War, declared that if in Europe there was one marriage yearly for each hundred persons there were two here and that if in Europe there were four births to a marriage there were eight here. Reckoning the average age of marriage at twenty, Franklin believed that our population doubled every twenty years. Kalm, a Swedish scientist, cited numerous instances of large families. In 1731 Marie Hazard, a New Englander, died at the age of a hundred; she had had five hundred children, grandchildren, great grandchildren, and great-great grandchildren, of whom 205 were alive at the time of her death, and one of them, a granddaughter, had been a grandmother for fifteen years. Eleven years later Sarah Furman, another New Englander, died at Trenton, New Jersey, aged ninety-seven; she left 260 living descendants, namely, 5 children, 61 grandchildren, 182 great grandchildren, and 12 great-great grandchildren.

If Bancroft is correct, a population of 500,000 was first

reached in 1721, 1,000,000 in 1743, and 2,000,000 in 1767. Estimates made by Bancroft, Pitkin, and Dexter vary slightly, but all seem to show a population of 1,000,000 people, presumably white, by the middle of the eighteenth century. According to De Bow, the 1775 population of the colonies was approximately 2,750,000, or about the same as that of Chicago in 1923. Of the total about 500,000 were negroes. Virginia, with 300,000 whites and 280,000 negroes, was easily first; Massachusetts, with 352,000 whites, and Pennsylvania, with 341,000, vied for second place.

The Revolutionary War probably retarded the population growth somewhat by removing husbands from the home and by checking the rate of marriage, but when the Treaty of Paris was signed in 1783, the population was perhaps close to 3,250,000.

The Census.—One of the provisions of the Constitution apportioned representation in the House and direct taxes in proportion to the population, and so, for the first time in history, the taking of a census periodically became necessary. Article 1, Section 3, reads in part:

> Representatives and direct taxes shall be apportioned among the several States which may be included within this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons, including those bound to service for a term of years, and excluding Indians not taxed, three-fifths of all other persons. The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct. . . .

Since that provision was made, fourteen census reports have been made with the following results:

Year	Population	Density	Per Cent Increase for Decade
1790	3,929,214	4.5	
1800	5,308,483	6.1	35.1
1810	7,239,881	4.3	36.4
1820	9,638,453	5.5	33.1

Year	Population	Density	Per cent Increase for Decade
1830	12,866,020	7.3	33.5
1840	17,069,453	9.7	32.7
1850	23,191,876	7.9	35.9
1860	31,443,321	10.6	35.6
1870	39,818,449	13.0	26.6
1880	50,155,783	16.9	26.0
1890	62,947,714	21.2	25.5
1900	75,994,575	25.6	20.7
1910	91,972,266	30.9	21.0
1920	105,710,620	35.5	14.9

Rate of Growth.—A glance at the table will show that prior to the Civil War the population doubled every twenty-five years, at a rate near the colonial growth. The increase varied little from a third each decade during the first seventy years, for free land was still abundant and remained so until about 1880; hence, the economic check to propagation did not operate, for the natural increase was easily provided with land and the cost of living was low. The Civil War slowed up the population growth because millions of fathers or potential fathers were taken from the homes, hundreds of thousands killed or crippled in battle, immigration checked, and the ordinary death rate materially increased. From 1860 to 1890 the gain was little more than a fourth each decade; from 1890 to 1910, it was only a fifth; and from 1910 to 1920, little over a seventh. So, although for the last fifty years our increase has averaged over a million a year, the net increase 1910-1920 was less than from 1900 to 1910. The most striking population characteristic, consequently, is the retarded rate of gain.

Causes of Retarded Rate of Growth.—The causes of this lessening rate of increase are varied: higher standards, practical disappearance of free land, improved machinery, slow immigration, influenza, war, high cost of living, pleasure, growing independence of women, education, sterility, and vice. Many people are beginning to realize that it is

better to follow France's example than China's, that a few children properly reared and socialized are infinitely preferable to double that number improperly reared and half-socialized, nay, that it is a crime to bring children into the world in order to gratify a sensual passion, when they cannot be cared for. Limitation of births is furthered by the practical disappearance of the best free land; no longer are children so essential to the clearing and cultivation of the farms, no longer is good land in large amounts to be obtained for the desire. Moreover, on the farms which have already been cleared labor is not so essential, for labor-saving machinery has been introduced on a large scale.

Our immense numerical increase, 1900-1910, was due in large part to immigration, but since that date war and legislation have combined to reduce the gain. The number of deaths in the registration area of the United States, which then included about three-fourths of the population, jumped from 1,066,711 in 1917 to 1,445,158 in 1918; deaths from influenza increased from less than 13,000 to over 234,000, and deaths from diseases of the respiratory system grew from less than 134,000 to over 245,000. Of course, many of these victims were fathers and mothers and prospective founders of homes, and so the population was not alone less by actual deaths but by the loss of the children who might have entered the homes. Of a similar effect was the war which cost us well over a hundred thousand in known dead and removed hundreds of thousands of men in the prime of life from the home for an indefinite period and caused other thousands, the fathers of future generations, to postpone marriage.

The thoughtful have likewise been restrained by the rising cost of living. Men have asked themselves, "Can I support that girl the way her father does?" and women have pondered, "Can he give me the pleasures dad does?" Possibly the couple postpones marriage and thus helps reduce the national birth rate; then, too, numerous married people, by methods both moral and immoral, limit the number of their offspring because of the high cost of living and their desire to maintain or elevate their standard of

life. But one of the most potent causes in the lowered birth rate is selfish pleasure worship. Many couples who are able to rear properly several children refuse to do so because such an action would interfere materially with the perverted idea of a good time; hence they whirl on in their giddy round of pleasure and lavish their affections on some good-for-nothing poodle or other pet whose caress is more highly esteemed than that of a child. If, as a widely known sociologist, Professor E. A. Ross, insists, two automobiles displace one child, the automobile is not an unmixed blessing.

Still another factor in the declining birth rate is the augmenting importance of women in economic life, for this makes for independence and so lessens the inclination to share authority with another in the home. Moreover, this ability of women to make a living or a career increases the divorce rate, long the highest in the civilized world and now perhaps one-seventh as high as our marriage rate, and consequently lessens births. Furthermore, the woman's movement in politics has had a similar effect on the home. So, too, the advocacy of the "American Idea," or two children to the family, has retarded growth. The spread of education among the women seems to operate as a check on the birth rate because a majority of them do not marry; when marriage takes place among the educated, the birth rate is apparently higher than among the wealthy uneducated with whom they associate. Apparently also physiological causes operate to produce sterility in American women, a sterility greater than that found in any other civilized country, and probably due to social conditions which produce exhaustion and physical degeneracy, manifested first of all in the women. Another cause, overexaggerated it is hoped, but nevertheless very important, is vice. According to some authorities a fifth of the marriages in the United States are sterile, and one-half of the childless marriages are due to venereal diseases. A high percentage of the young men of this country contract sex vices prior to marriage and disseminate venereal diseases among innocent women and children. The results, which

might be avoided by the insistence on a clean bill of health from a reputable physician, are broken homes, sterile marriages, and a high infant mortality.

Rate of Growth in Various Sections.—Obviously some regions of the United States have increased far more rapidly in population than have others. This has been especially true of the newer regions which often doubled or increased several-fold within a single decade because of the low cost of living, abundance of free land, exodus from older states, immigration from Europe and other causes. The citation of figures would be dry, for few states besides Iowa, 1900-1910, Nevada at various times, especially 1910-1920, and New Hampshire and Mississippi, 1910-1920, have lost in population. Of course, many of the older New England States, notably New Hampshire and Vermont, registered almost negligible gains in entire decades. Prior to the Civil War the western states as a whole gained three times as rapidly as the eastern states; later decades, however, tended to show a nearer approximation to equality in the rate of growth for the sections. Even at that, while the population of the whole country increased two and a halffold, 1860-1900, three sections did not double—New England, the South Atlantic, and the East South Central; during the same period the West South Central almost quadrupled, the West North Central increased fivefold, the Pacific States more than fivefold, and the Rocky Mountain States over ninefold. In the next two decades the population of the Rocky Mountain and Pacific States doubled, which is true of no other group of states. For the country as a whole the increase was little over a third, or a percentage about the same as any single decade prior to the Civil War. But even though the growth west of the Mississippi was much greater measured in percentage than east of the river, about three-fourths of the population resided east of that river and of the seven leading states, all shown in the graph, only Texas was west of the river. The population of the six, exclusive of Texas, was approximately two-fifths that of the union. Of the next three states, California, Missouri, and New Jersey, the only ones with more

than three million people, two are west of the Mississippi. The ten states held slightly more than half the population of the country.

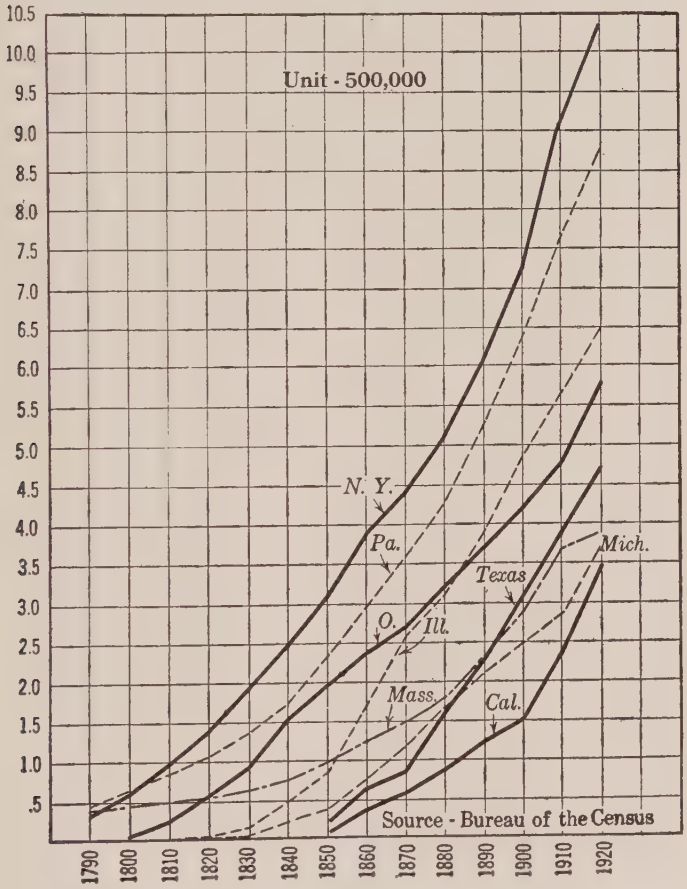

Chart No. 1. Population Growth of Selected States.

Certain Terms Defined.—Of course, the western settlements had a marked effect on the center of population, which, as defined in census terms, is the point where the country, if flattened out, would balance, provided the

weight of the inhabitants were uniform. The center of population thus differs from the median of population, which is the intersection of the two perpendicular lines which divide the population equally east and west and north and south. Obviously the center of population in 1790 was near the east coast, about ten miles southeast of Baltimore. Since that date it has moved steadily westward, with occasional divergences to the north or south. At times the westward movement was fifty or more miles a decade; from 1850 to 1860, it moved westward eighty-one miles and at the outbreak of the Civil War rested about twenty miles south of Chillicothe, Ohio. Since the Civil War the rate of the westward movement has declined; in the period, 1910-1920, it moved westward from Bloomington, Indiana, about 9.8 miles and rested 1.9 miles west of Whitehall, Owen County, Indiana. The median of population is east of the center near the border of Indiana and Ohio, and about halfway between the northern and southern boundaries. The center of area for continental United States, or "the point on which the surface of the United States would balance if it were a plane of uniform weight per unit of area," is about ten miles north of Smith Center, Smith County, Kansas, and fifty-one miles north and 647 miles west of the center of population.

Density of Population.—As the preceding discussion implies, the density of population, or the number of people to the square mile, is usually greater in the older sections than in the newer states. The increase in density for the country as a whole has already been noted and needs little comment other than that decrease or slow growth is often due to the admission of territory not hitherto included in the area of enumeration. In 1790 only three states—Rhode Island, Connecticut, and Massachusetts—had more than forty people to the square mile, but in 1860 three times that number had over forty, and in 1920 one more than half of the states had a density of over forty. In the latter year only three states west of the Mississippi—Missouri, Iowa, and Louisiana—had a density more than the country as a whole (35.5); only two east—Florida

and Maine—had less, and twenty-seven were above the average for the country as a whole. Eleven states—North Dakota (9.2), Colorado, South Dakota, Oregon, Utah, Idaho, Montana, Arizona, New Mexico, Wyoming, and Nevada (0.7)—had a density of less than ten. The land area of these eleven states was about thirty-seven per cent of the total but their population was only 5.1 per cent. The land area of the ten leading states in density—Rhode Island, Massachusetts, New Jersey, Connecticut, New York, Pennsylvania, Maryland, Ohio, Illinois, and Delaware—plus the District of Columbia, was only 7.5 per cent of the whole, or considerably less than that of the state of Texas, but it contained 40.2 per cent of the total population. To express density in a somewhat different way, we might note than in 1920 there were 908 acres of land to every person in Nevada; the average in Rhode Island was 1.1, in Massachusetts 1.3, and in New Jersey 1.5. The greatest density is naturally found in the great industrial and commercial states and the least density in the newer mining, grazing, and agricultural regions.[1] (See chart on page 62.)

Cities.—In the colonial period, with its small population and predominant agricultural life, cities were practically unknown. At the close of the seventeenth century the population of Philadelphia was probably 10,000, that of Boston 7,000, and that of New York 5,000. In all probability Philadelphia, Boston, and New York each had less than 25,000 population in 1775. In 1790 the largest cities in the

[1] The following table gives the population of our outlying possessions in 1910 and 1920, or the nearest census thereto, and the density for 1920:

	1910	1920	Density
Alaska	64,356	55,036	0.1
American Samoa	7,251	8,056	104.6
Guam	11,806	13,275	63.2
Hawaii	191,909	255,912	39.7
Panama Canal Zone	62,810	22,858	64.0
Porto Rico	1,118,012	1,299,809	378.4
Military and naval, etc., services abroad	55,608	117,238	....
Philippine Islands	7,635,426	10,314,310	90.0
Virgin Islands	27,086	26,051	197.4

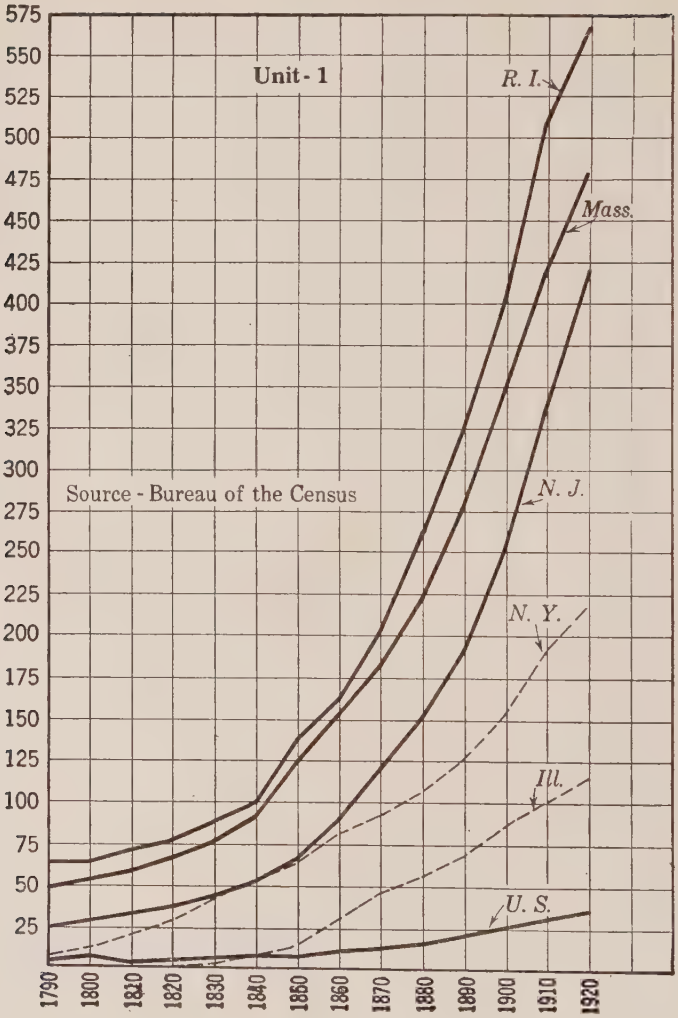

CHART NO. 2. DENSITY OF POPULATION.

United States were New York, Philadelphia, Boston, Charleston, South Carolina, Baltimore, and Salem; they contained 3.3 per cent of the population. In 1860, 141

cities of more than 8,000 contained 16.1 per cent of the population, and in 1920, 924, 43.8 per cent. On the latter date there were 2,787 incorporated places of more than 2,500 holding 51.4 per cent of the population. If we add to those living in incorporated places those living in unincorporated places we have three-fifths of the population of the country. It is, of course, inadvisable to give a long list of places but we might note the leading cities in 1860 and again in 1920:

City	1860	City	1920
New York	813,669	New York	5,620,048
Philadelphia	565,529	Chicago	2,701,705
Baltimore	212,418	Philadelphia	1,823,779
Boston	177,840	Detroit	993,678
New Orleans	168,675	Cleveland	796,841
Cincinnati	161,044	St. Louis	772,897
St. Louis	160,773	Boston	748,060
Chicago	109,260	Baltimore	733,826

In 1860 no other city had as many as 100,000 people and in 1920 no other as many as 600,000, although Pittsburgh, Los Angeles, Buffalo, and San Francisco in the order named were over 500,000.

City growth is world-wide, but we are interested in it only in the United States, where, as in other countries, the causes are varied. One of the most important is the diminishing importance of agriculture in the life of man. Moreover, labor-saving machinery and scientific and capitalistic agriculture tend to drive men to the cities; fifty men with modern machinery can now do more work than ten times that number of European peasants without the machinery. The growth and centralization of manufacturing industries in the city through improved machinery and transportation and enlarged markets attract thousands of people to the cities. Especially is commerce a vital factor; medieval cities were largely centers of trade and commerce where goods were distributed to minor points. The break between water and land transportation favors particularly the development of large cities.

Numerous minor causes of city growth are found. Better wages and better economic opportunities with shorter hours and better working conditions draw people to the cities. Again many parents move to the cities in order to supply their children with better educational and religious opportunities, for it is the prevalent belief that the best schools, teachers, churches, and ministers are found in the cities. The cities also are popularly supposed to have superior opportunities for pleasure and amusement, and it is certainly true that many rural communities are sadly lacking in opportunities for play and fun. Many farmers who have amassed a fortune or a good living retire to the cities for the comforts and conveniences in which many farm homes are still deficient. Legislation in the form of taxation has also promoted the growth of the city and the depopulation of the country; in the former much property is personal and escapes taxation, but in the latter the personal property is of such a nature that it seldom escapes. Unfortunately, too, the education in rural communities until lately has failed to adjust the individual to rural life; on the other hand, it has tended to make him ambitious and restless and to drive him to the city. The country has thus lost needed leaders.

For various reasons, then, three-fifths of our population are found in cities and villages, and this gives rise to numerous problems, which can only be suggested. City population, due probably to the greater economic opportunities of women, has a higher percentage of females than rural communities. In the cities, too, chiefly due to immigration from the country districts, a higher percentage of people in the active period of life is found. Here, too, the proportion of foreign-born is twice as great as in the country as a whole, because the city offers opportunities of work and permits families and friends to be together. The birth rate, chiefly because of the larger number of women of child-bearing age, is higher in the cities, as is the death rate, because of poor sanitary and living conditions. Often, too, the physical condition of men and women in the cities is below that in rural communities; insanity is twice as

common, the suicide rate fifty per cent greater, and poverty and pauperism, crime and illegitimacy about twice as great.

On the other hand, illiteracy is much less among the native whites in the cities, for schools are better, the teaching period longer, attendance more constant, and the facilities of social settlements, lecture and concert halls, theaters, libraries, art galleries, and museums are practically confined to the cities. Although large districts in some cities are becoming churchless, religious conditions, on the whole, are better than in rural districts where numerous deserted churches may be found. Philanthropic activities likewise center in the cities; hence more is done for the city population than for that of rural communities.

Indians.—In this chapter, rather than the next, two groups of our population will be noted briefly, the Indians and the negroes. The former were native when the whites arrived, and so we should note them here rather than in the chapter on immigration; the latter came over almost as early as the whites and came against their will rather than voluntarily as did most of the immigrants. And so they, too, will be noted here.

When the whites first reached this country, they found it sparsely populated with Indians, who were perhaps more numerous than they now are. Some of the northeastern Indians, as the Iroquois, lived in groups of forty or fifty families, with separate family apartments opening on a central aisle which ran throughout the house, a crude building made of stout saplings and overlaid with bark or rough mud plaster. The families generally shared their corn, beans, pumpkins, wild turkey, fish, bear, and buffalo meat; personal property usually consisted only of clothing, ornaments, and weapons. As the Indians were nomads, largely subsisting by hunting, they wished their hunting lands kept free and wild. They resisted the constant encroachment of the white man, and many bloody wars resulted. With these we have not space to deal.

The wars and the desire of the Indians to retain their lands naturally retarded settlement, but the Indians were

pushed slowly westward. The Dawes Bill of 1887, an effort to break up their tribal organization, granted to each head of an Indian family citizenship and 160 acres of land. Within a year about fifteen thousand young Indians were enrolled in the government schools. Some Indians are found in every state, but their numbers are stationary or declining.[2]

The value of the Indian property is now probably a billion dollars, most of the Indians speak English, over a third read and write it, practically all wear citizens' clothing, four-fifths live in permanent homes, and over sixty thousand children are instructed in the government schools at a cost of approximately five million dollars. In 1926 the Bureau of Indian Affairs spent $18,442,000.

Negroes.—Negroes were early introduced into the West Indies and from there to the mainland of America, the first in what is now the United States being the twenty brought to Jamestown by a Dutch trading vessel in 1619. Growth of slavery was slow at first. As late as 1681 Virginia had only two thousand slaves, or merely a third of the number of indentured servants. Thereafter growth was more rapid and in 1760, nearly 400,000 negroes, three-fourths of whom were south of the Mason and Dixon Line, lived in what is now the United States. At the close of the colonial period the number of negroes was about 500,000 and thereafter growth occurred as indicated in the accompanying chart.

Contrary to the general opinion the negro population failed to increase as rapidly as the white after 1810, the

[2] The following table lists the Indian population for the chief states, over 10,000 in 1920:

	1920	1910	1900
Oklahoma	57,337	74,825	64,445
Arizona	32,989	29,201	26,480
New Mexico	19,512	20,573	13,144
California	17,360	16,371	15,377
South Dakota	16,384	19,137	20,225
North Carolina	11,824	7,851	5,687
Montana	10,956	10,745	11,343
United States	244,437	265,683	237,196

usual rate of increase, unlike the white in that it was unassisted by immigration, being from two-thirds to half that

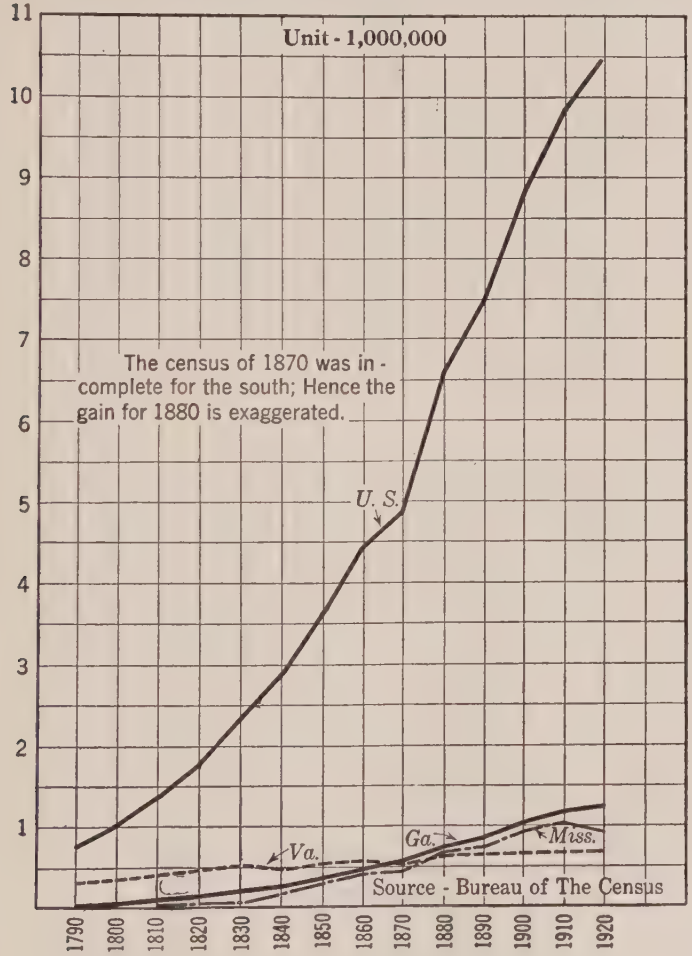

CHART No. 3. NEGRO POPULATION.

of the white. The proportion of negroes has consequently fallen from about one-fifth of our total population to one-tenth.

Year	Per Cent Increase of White Population	Per Cent Increase of Negro Population	Per Cent of Population Negro
1790	...	...	19.3
1800	35.8	32.3	18.9
1810	36.1	37.5	19.0
1820	34.2	28.6	18.4
1830	33.9	31.4	18.1
1840	34.7	23.4	16.8
1850	37.7	26.6	15.7
1860	37.7	24.2	14.1
1870	27.5	21.4	13.5
1880	26.4	23.2	13.1
1890	26.7	16.2	12.3
1900	21.2	17.1	11.6
1910	22.3	11.5	10.7
1920	16.0	6.3	9.9

The early centers of negro population were in the South Atlantic States. In 1790 approximately eighty-seven per cent of the negroes were found in Maryland, Virginia, and the Carolinas. With the development of the Southwest slaves were sold from the older eastern states and the northern border states to the cotton planters of the South; hence in the older regions increase was slow. The numbers and percentage for the East and West South Central States, on the other hand, constantly increased. When the Civil War released the negroes from bondage, little change in distribution was noticeable, for as late as 1890 the percentage for the South was 90.3, or only two per cent below the highest figure. Since then the decrease has been marked, the percentage falling to 85.2. The cities of the North drew increasing numbers largely because of the demand for unskilled labor furnished by the World War. From 1910 to 1920 the urban negro population increased one-third, but that of the rural communities declined, some negroes, of course, going to southern cities, but most to northern cities, where, in general, their rate of increase was from two to three times as rapid as that of the whites. In

only two cities of the leading twenty-four in negro population—Louisville and Nashville—did a decline occur.

NEGRO POPULATION OF THE SIX LEADING CITIES AND A FEW OTHER SELECTED CITIES

	Negro Population			Per Cent Increase	
	1920	1910	1900	1910-1920	1900-1910
New York	152,467	91,709	60,666	66.3	51.2
Philadelphia	134,229	84,459	62,613	58.9	34.9
Washington	109,966	94,446	86,702	16.4	8.9
Chicago	109,458	44,103	30,150	148.2	46.3
Baltimore	108,322	84,749	79,258	27.8	6.9
New Orleans ...	100,930	89,262	77,714	13.1	14.9
Memphis	61,181	52,441	49,910	16.7	5.1
Detroit	40,838	5,741	4,111	611.3	39.6
Cleveland	34,451	8,448	5,988	307.8	41.1
Charleston, S. C..	32,326	31,056	31,522	4.1	—1.5

With this rapid movement to the cities went a decline in rural negro population and the proportion the negro population bore to the total in the negro strongholds of the South. Every state in the East South Central Division lost in negro population, 1910-1920, but though Mississippi lost nearly seventy-five thousand her urban increase was 3.4 per cent; for the division as a whole the increase was twelve per cent. In the North, by way of contrast, we might note that Michigan increased its urban negro population 352.5 per cent, and its state population 251 per cent. In 1920 the twelve leading states in negro population, in spite of rural losses and northern gains, were: Georgia (1,206,365), Mississippi, Alabama, South Carolina, North Carolina, Texas, Louisiana, Virginia, Arkansas, Tennessee, Florida, and Pennsylvania (284,568). In only two states, Mississippi (52.2 per cent) and South Carolina (51.4 per cent), was over half of the population composed of negroes.

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CHAPTER IV

IMMIGRATION

Early Races.—In the settlement of any new country those already there, and especially those who hold property or desire labor, are anxious to secure large numbers of immigrants. In our early history, to be sure, all except the Indians were immigrants, and our population was diverse. Perhaps 50,000 criminals were sent over in the colonial period, and possibly half of our immigrants, if Professor J. R. Commons is correct, came over as indentured servants. English Puritans came over in the eighteenth century to the number of 20,000 or more, and the Scotch Presbyterians numbered 150,000. The Germans came over in large numbers to escape the ravages of the Thirty Years' War and the oppression of the home land. William Penn, anxious to increase his colonists, maintained paid agents in the Rhine Valley. By 1776 some 200,000 Germans were found in the colonies; possibly the proportion was as high as a tenth. The Scotch-Irish made up a sixth of the population, and French, Dutch, Swiss, and Swedes were scattered over the colonies. The Germans were numerous in Pennsylvania and adjoining regions. The Scotch-Irish had settled in Pennsylvania and from there had gone down the Shenandoah Valley into Virginia and the Carolinas. The Dutch, as late as 1750, were still fairly numerous in the Hudson and Delaware valleys, and some Swedes were found in the latter. French Huguenots, chiefly for religious reasons, had settled in the Carolinas and Middle Colonies. Many French Catholics were in the Mississippi Valley and toward the lower part a considerable sprinkling of Spanish was noticeable.

Numbers.—Although the number of immigrants seems negligible to us, we must keep in mind that the proportion to total population was high. Even if Franklin is correct in saying that less than eight per cent of the more than a million English whites of 1755 were born outside of America, the proportion was not much lower than now. But we must remember that Professor Channing believes that one-third of the colonists in 1760 had been born outside of the colonies, and that Bancroft for a period fifteen years later insisted that one-fifth of the colonists had for their "mother tongue some other language than English." Possibly at the outbreak of the Revolution ninety-eight per cent of New England's population was either English or of unmixed English descent, but even in that exceptional region, there were other peoples, for skilled artisans had been brought over from Germany, Holland, Switzerland, Portugal, and other European countries. These foreigners frequently became leaders; to mention one instance, a third of the signers of the Declaration of Independence, or to be exact, eighteen out of fifty-six, were of non-English stock.

Immigration, 1776-1819.—During the Revolutionary War and the troubled times prior to the adoption of the Constitution, the country gained little by immigration. The elements found in the colonial period persisted and with the acquisition of Louisiana in 1803 numerous Spanish and French came under our jurisdiction. No official records of our immigration were kept prior to 1819; hence most of the estimates are guesswork, or rather constructive reasoning. According to one estimate the total number from 1776 to 1819 was only 250,000; from 1789 to 1800, the number was perhaps 50,000; from 1800 to 1810, 70,000; and in the next ten years 114,000. The highest number recorded in any year in this period up to 1817, according to Blodget, was 10,000 in 1794. Many English were anxious to emigrate, but the British authorities opposed this, and so the rate declined. For the period 1790-1810 the average was perhaps not over 6,000. Adam Seybert points out some reasons for the low rate:

There were many difficulties in the way of the emigrants; some were deterred from the false reports which were industriously circulated concerning the healthiness of our climate; the British system of impressment alarmed others: thirty persons have been impressed from on board a single passenger ship; the most active and vigorous were always selected, and they are the persons who most commonly seek to better their fortunes in foreign countries; heavy charges in the form of fees, prevented the poor classes; and the armies and navies of Europe employed many, who, under different circumstances, would have emigrated.[1]

Since, however, the war lessened immigration, it is doubtful if more than 200,000, or six or seven thousand a year, came in the thirty years closing in 1816. In that period, English, Irish, and Germans, repelled by the hard conditions of the home land and attracted by the better opportunities of the new republic, came over in the largest numbers.

Immigration, 1819-1860.—Beginning with 1819 fairly accurate statistics on immigrants were kept, the number being indicated on Chart 4. With occasional fluctuations and some marked reductions, as after the Panics of 1837 and 1857, the tendency was upward, 100,000 being passed in 1842, 200,000 in 1847, 300,000 in 1850, and the high mark prior to the Civil War being set in 1854 at 427,833. The total number, September 30, 1819, to December 31, 1860, was well over 5,000,000, of whom more than half came in the last decade. A little more than three-fifths were males and even more significant for a developing country half were between fifteen and thirty years of age and thus able to aid in conquering the new land and in increasing its commerce and industry. Of the less than half who stated their occupations, laborers, farmers, mechanics, merchants, servants, miners, and mariners led in the order named; the first numbered well over 800,000, whereas the last fell below 30,000. Although the statistics list twenty-one other separate occupations, including professional men and skilled laborers, not one, except spinners

[1] *Statistical Annals of the United States of America* [Philadelphia, 1818] 29.

and weavers combined, passed 7,500, though physicians were less than four hundred below that number, or, to be exact, 7,109.

Of the number of foreigners arriving in this forty-one year period, over half came from Great Britain and Ireland and nearly a third from Germany. France, with little more than 200,000, was next; only one other division, British North America, contributed over 100,000. The only other countries to furnish over 10,000 were: China (41,443, only forty-six prior to 1851), West Indies, Switzerland, Norway and Sweden, Holland, Mexico, Spain, and Italy. Eastern and southern European immigration, it will be noted, had hardly started.

Pushing Causes.—One of the questions which naturally arises over such a vast movement relates to the causes, which may be located either in the country from whence the immigrant comes or in the country to which he goes. The forces which impelled emigration fell into four main groups: religious, which included restrictions on church members because of beliefs or practices, either active persecution or unfair discrimination; social, as the difficulty in rising from a lower to a higher class; political, as dissatisfaction with the existing government through suffrage or office disqualifications or active injuries; and economic, such as the inability to obtain and retain land, lack of employment, low wages, damages wrought by drought, flood or other natural calamity, and over-population. The religious causes were highly important in early migrations, but their significance, with occasional fluctuations, has steadily declined. The social causes influencing emigration operated in all of the countries, but they were not so important as either the political or economic. European revolutions in 1830 and 1848 operated to send emigrants by the tens of thousands to the United States, and military service and heavy taxation influenced others. The Opium War, 1839-1841, in China, followed by the Taiping Rebellion of 1850, famine, and plundering drove thousands of the Chinese out of the country. The economic causes already noted were, however, the most important. The operation of the

pushing forces, or those in the home country, can be noted for only two countries, Ireland and Germany.

In the first four decades of the nineteenth century Ireland sent comparatively few emigrants from the country, and her population increased very rapidly, for her birth rate was high. When the famine of 1846, due to the failure of the potato crop, afflicted the country, the turning point came. With poor and scanty food, the people fell an easy prey to pestilence; thousands died of actual starvation and fever, and tens of thousands emigrated as soon as possible. The population decrease, 1841-1851, was 1,600,000; between 1847 and 1852, 1,200,000 people, or one-seventh of the 1841 population, emigrated, and about five-sixths settled in the United States. Thus, even though religious, social, and political causes operated in the emigration movement, the predominant factor for Ireland was economic.

The German emigration movement rose rather irregularly after the close of the Napoleonic wars, but near the middle of the century a rapid movement set in because of several bad harvests, economic depression, and the political disturbances of 1848-1850. By 1847 the number had passed 40,000, and seven years later it was 127,694. During the decade, 1851-1860, over 1,000,000 settled in America, most being peasants desirous of land.

Pulling Causes.—The forces just noted—religious, social, political, and economic—drove emigrants from the home land and the same forces drew them to the United States. In this country comparative religious freedom was enjoyed even though bigoted churchmen and narrow political partisans occasionally stirred up riots against Catholics and Jews. Here also the industrious man of average ability could rise to a higher class and enjoy the respect of all, for the Biblical injunction, "By their fruits ye shall know them," was more literally heeded; hence works rather than birth became the standard. In this country, save for temporary spasms such as the Alien, Sedition, and Naturalization laws of 1798 and the Know Nothing Party of a later date, little opposition was offered to foreigners prior

to the Civil War; as naturalized citizens they helped make laws and were eligible to all the offices except the presidency. Here also the immigrant found an opportunity to make an honest and comfortable living, perhaps a fortune, and at any rate an opportunity to enjoy the honest fruits of his toil. The factories of the East called for labor; the developing mines of the East afforded employment; rising homes, cities, and developing transportation facilities demanded work. The fertile prairies of the West sounded their siren call at $1.25 an acre, and if perchance the sum was lacking, a year's work in the East would easily give the immigrant the means to purchase a quarter section of land. The gold of California called loudly to the adventurer after 1848. Ministers, physicians, lawyers, teachers, and other professional men felt the lure of a country where advancement was rapid and service worth while to the competent. And the country called likewise to the servant girl who could find work and perchance the desire of all natural women, a home of her own. Yes, the United States called loudly to the young and old of both sexes and they answered by the hundreds of thousands.

Numbers Since 1860.—When the Civil War broke out the number of immigrants declined, for the uncertainty of the issue, and the fact that they were not exempt from military service led many prospective settlers to delay their migration. Statistics, of course, show numerous and wide fluctuations; the lowest point from 1863 to 1918 came in 1878 with 138,469 arrivals. The record set in 1882 at 788,992 did not fall until 1903. The Crisis of 1884, as in the case of our other panics, lowered for a few years the number of our immigrants. In the year of the Spanish-American War, 1898, less than 250,000 immigrants arrived. Nine years later, however, the high record of our entire history was set at 1,285,349, and not until 1914 was that record seriously threatened. The European War caused a marked reduction in immigrants and the year 1918 set the low point for some three-quarters of a century. The years 1920 and 1921 saw the revival of immigration, but the three and two per cent laws have definitely

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limited immigration as shown in Chart 5. All told up to the present time 37,000,000 immigrants have settled in the United States.

European Immigrants.—The most prominent characteristic of the immigration movement since the Civil War has been the shift from north and west European sources to south and east. For example, in 1882 western Europe supplied 71.3 per cent of our immigrants and eastern

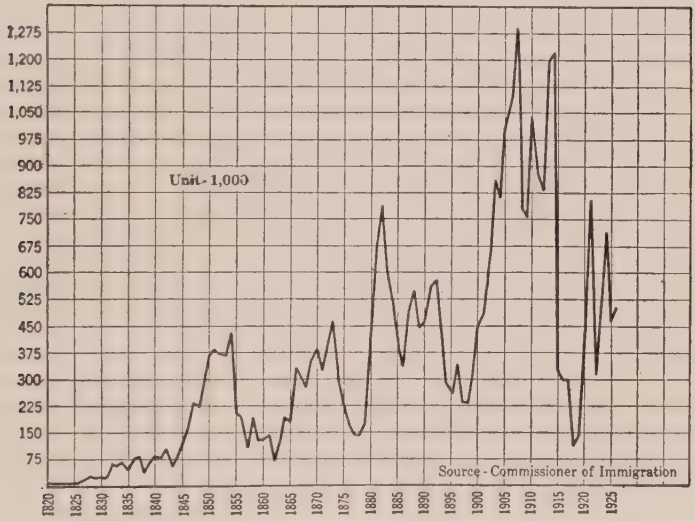

Chart No. 4. Immigrants by Fiscal Years.

Europe 10.5, whereas in 1907 western Europe supplied only 17.7 per cent and southern and eastern Europe furnished 75.5. Another characteristic is the big decrease, about a third in the last decade of the nineteenth century, because of better opportunities at home and elsewhere and the economic depression and restrictive legislation here.

The immigration from Ireland has been noteworthy in that the number of the two sexes has been approximately equal. The emigration was largely rural and was due to the hardships of the land tenure system, particularly the difficulty of acquiring land and the oppression of the land-

lords. Since the middle eighties, however, legislation has improved conditions and lessened emigration; an important fact, however, is apparent when we note that the population of the 1900 Ireland was little more than half that of the 1840 Ireland. Toward the close of the century the emigrants averaged only about 30,000 and most of these settled in the United States. Even in 1914, the second highest year, less than 34,000 settled in the United States. In 1850 the Irish had constituted more than two-fifths of our total foreign-born population, and as late as 1870 still ranked first, but by 1920 they had fallen to sixth place.

During the Civil War the German migration movement declined, but after 1865 for a decade it did not fall below 100,000 except in two years. From 1874 to 1879 the number was small, but after that it rose rapidly again and in 1881 the German emigrants numbered 220,902, of whom 206,189 settled in the United States. After 1893 German emigration decreased rapidly and seldom reached 30,000. The main reasons for the decline were the commercial and industrial expansion of Germany and the development of social insurance. Of course, the main drawing card in America—free land—was rapidly disappearing, and so the Germans in increasing numbers sought the opportunities offered in South America, Asia, and elsewhere. In 1914, however, German immigrants numbered nearly 80,000, but the war practically stopped all migration. In 1860 the Germans had numbered about 1,276,000 and with the Irish constituted about seventy per cent of the total foreign-born population. By 1890 their number was approximately 3,000,000. Like the Irish the German immigrants from 1900 to 1920 numbered less than 500,000, and although they still hold the first place among the foreign-born, a position attained in 1880, they have decreased nearly 1,000,000 since 1900, about eleven per cent in the first decade of the present century and over twenty-five per cent in the second. The rate of decrease is fairly uniform, though naturally higher in the cities. For the larger cities it ranged from 38.6 per cent in Milwaukee to 30.2 per cent in New York; the cities between these two percentages in

decreasing order are Chicago, St. Louis, Philadelphia, and Detroit.

The immigrants from Great Britain likewise formed a decreased percentage of the total after 1883, due to improved conditions at home and especially to the opportunities offered in such colonies as Canada, Australia, and South Africa. In the year just mentioned, nevertheless, 320,118 British subjects migrated. From 1853 to 1903, about 9,500,000 migrated, of whom three-fifths, chiefly Irish, went to the United States. By 1904 about a fourth went to Canada and eight years later approximately half.

Immigration from Norway, Sweden, and Denmark tended to increase slightly up to 1890, but the highest combined number for any decade was only an eighth of the total. On the other hand, the arrivals from Austria-Hungary, Italy, Russia, and Poland steadily increased because of over-population, high taxes, poverty, and religious persecution, at least in Russia and Poland. After 1885 the demands of the United States for unskilled labor for railroads, city buildings, and industry generally had a marked effect. Then, too, as in other countries, the letters written by new arrivals to relatives or friends in the home country became village property and increased or decreased migration according to the tone of the letter. Of an encouraging nature was the advertising of the steamboat companies and of the quasi-labor agents.

Up to 1887 the number of our immigrants from Russia, chiefly Jews, did not exceed 18,000, but by 1913 it was nearly 300,000. In 1879 less than 6,000 Italians came to the United States and nine years later only an eighth of the Italian emigrants. By 1914, however, nearly 300,000 came. Austrians and other south Europeans increased in much the same proportion. In 1914 the leading races were: Italian (296,414), Hebrew, Polish, German, English, Greek, Russian, Magyar, Croatian and Slovenian, Ruthenian, Scandinavian, and Irish (33,898).

Other Immigrants.—Three other peoples deserve attention in the discussion of migration, namely, the Orientals—Chinese and Japanese,—the Mexicans, and the Canadians.

Between 1851 and 1900 China sent us about 310,000 immigrants and in 1882 when the first Chinese Exclusion Law was passed the number of Chinese in the country was about 130,000. That number had decreased to little more than 60,000 in 1920. About half of the number live in California, but the remaining Pacific Coast and Rocky Mountain states are also favorite settlements. In 1870 there were only 55 Japanese here, in 1890 less than 2,000 and as late as 1900 less than 25,000. By 1910, the number had trebled, and in 1920 it was over 111,000. On the latter date nearly two-thirds were in the one state of California and most of the remainder in Washington and Oregon. One of the encouraging points about the Japanese immigration toward the close of the period was the increasing number of women; in 1900 they did not exceed six per cent of the Japanese population in any state, but twenty years later they constituted a third of the Japanese population of the states just named. The increasing proportion of women lessens the problem, for many authorities consider the Japanese assimilable and urge the franchise as a spur to Americanization. The Westerners, however, have been strong against Asiatic immigration and a "gentleman's agreement" in 1907 closed the country at least partially to Japanese laborers, a restrictionist policy which was extended in 1924. In 1918, however, the Japanese ranked third in immigrants; Mexico and England led.

In the last two decades the Mexicans in the United States have made notable gains. We have had some Mexicans since our earliest history and especially since the Cession of 1848. In the decade from 1900 to 1910 the number more than doubled, or advanced to 219,802, a gain of 115 per cent; in the next decade it reached 478,383, an increase of 118 per cent. This last gain went largely to Texas, California, and Arizona, all formerly a part of Mexico. Texas alone gained nearly half of the increase, or over 125,000; the three states just cited accounted for four-fifths of the increase. Naturally these three states had a more rapid rate of increase for the foreign-born white than any other, 1910 to 1920. The main causes were probably

the oil and agricultural developments in the United States, and the unsettled political and economic conditions of Mexico. Many Mexicans, of course, cross the border without proper credentials, but even so, in 1918 they led all properly accredited immigrants coming to this alluring country.

Another short range migration is that of the Canadians. In the last decade there was little change for the British Canadians whose figures stood at 810,987 in 1910 and at 810,092 in 1920, but the French Canadians declined twenty per cent in the last decade and 2.4 per cent in the previous one. In 1910 over two-thirds of the French Canadians were in New England with half in Massachusetts alone. This division suffered less than the others, for with two-thirds of the total number it experienced only half of the loss. New York, Michigan, and Minnesota were the heaviest losers. Mortality was perhaps the main cause of the reduction in New England, but probably a fairly high percentage in the other sections returned to Canada.

Distribution of Immigrants.—One of the points of interest is the distribution of these immigrants. Alabama, Arkansas, Florida, Georgia, Mississippi, and North Carolina had less than one per cent of the population foreign-born in 1860, 1900, and 1920; Illinois, Indiana, Iowa, Ohio, Michigan, and Wisconsin had seventeen per cent in 1860, over sixteen in 1900, and nearly fifteen in 1920. In the latter year only 0.8 per cent of the population in the East South Central division, 2.2 in the South Atlantic, and 4.4 in the West South Central was foreign-born. The percentage of foreign-born has varied slightly from decade to decade. From 1870 to 1920 native whites of foreign parentage increased from 10.8 per cent of the total population to 14.8, and native whites of mixed parentage advanced from 3.0 to 6.6. Approximately three-fourths of all the foreign-born whites lived, in 1920, east of the Mississippi River and north of the Mason and Dixon Line. Of the nearly 14,000,000 on that date New York held more than 2,800,000, Pennsylvania nearly half that number, Illinois over 1,200,000, Massachusetts well over 1,000,000, and

California, New Jersey, and Michigan approximately 750,000 each.

With the exception of the British, who distribute themselves with considerable uniformity, each race seems to have long had a favored region of settlement. The Irish preferred the Middle Atlantic States; the Germans, New York, Pennsylvania, Wisconsin, and Illinois, though considerable settlements are found in Michigan, Iowa, and Missouri; the Scandinavians, the Northwest, especially Minnesota and the Dakotas; the Italians, New York, Pennsylvania, New Jersey, Massachusetts, Connecticut, and Illinois; the Austro-Hungarians, New York, Pennsylvania, New Jersey, Illinois, Ohio, and Massachusetts; and the Russians, New York, Pennsylvania, Massachusetts, New Jersey, and Illinois. In each case approximately three-fourths of the natives named resided in the specified regions. The Hebrews are fairly well distributed, but their favorite states are New York, Pennsylvania, and Massachusetts; in 1907 nearly two-thirds of all arrivals settled in New York.

The figures just cited indicate that the immigrants have settled in the manufacturing and commercial states, and presumably in the cities where work is most abundant. The city-ward tendency has long been marked, the cities in 1920 holding three-fourths of the foreign-born whites. Especially was the urban growth marked among the South and East Europeans. W. S. Rossiter, however, gives a caution against too hasty generalizations:

> It is important in this connection to keep constantly in mind the fact that the accumulation of immigrants in cities is not a fair test of their urban tendencies. Cities are the natural points at which immigrants arrive; they are the points at which a living of some sort can usually be secured. The dispersion of the foreign born to smaller communities and to rural districts is at best a slow process. In a period of rapid immigration, the cities choke up with immigrants. When immigration slackens the dispersion of newly arrived foreigners to other parts of the country can better keep pace with the number entering the various ports.[2]

[2] Rossiter, W. S. *Increase of Population in the United States,* 1910-1920 [Government Printing Office, Washington, 1922] 111.

The fact remains, nevertheless, that many of our cities are crowded with foreigners and their children. The accompanying table, though intended to show this fact, also reveals some contrasts:

PERCENTAGE OF NATIVE WHITE, NATIVE PARENTAGE, 1920, IN SELECTED CITIES OF OVER 50,000

Lawrence	13.1	Chicago	23.8	New Orleans..	49.2
Passaic	13.8	Manchester ..	24.0	Washington ..	54.7
Fall River ..	15.9	Boston	24.3	Louisville ...	59.3
Holyoke	18.3	Cleveland ...	26.6	Nashville	62.5
Bayonne	18.9	Detroit	31.6	Little Rock ..	62.7
New York ...	20.7	San Francisco	33.0	Allentown ...	70.7
Hoboken	21.2	Philadelphia .	38.3	Wichita	80.4
Lowell	21.9	St. Louis	46.5		

In 1920, to note one example, New York City's actual foreign-born population amounted to well over a third of the total population and with the native white of foreign or mixed parentage to three-fourths. New York had as many Russians as Moscow, more Italians than Naples, more than twice as many Irish as Dublin, three-fourths as many Austro-Hungarians as Vienna, and nearly as many Germans as Leipzig. The gains of the Russians and Italians were especially remarkable.

Effects and Tendencies.—Before discussing legislation it will be worth while to suggest briefly some of the effects and tendencies of modern immigration. Only a fifth or a sixth of the immigrants have been professional men or skilled laborers; hence they have naturally gravitated toward the basic industries where the demand for unskilled labor was greatest. Although the foreign-born make up only a seventh of our total population, they furnish approximately one-fourth of those engaged in domestic service and transportation, one-third of those employed in manufactures, and one-half of those busied in mining. By their lower standards they have tended to eliminate the native-born from the occupations which they have desired. For decades practically two-thirds of the immigrants have been

males, and discrepancy in the proportion of the sexes never has a good effect. Professor Walker and others have held that immigration has restricted the native birth rate, for the native whites try to maintain their standards of living rather than the size of their families. It is unquestionably true that population increased more rapidly in the period prior to our big immigration movement than it has since and it is, moreover, true that the southern whites, since the Civil War practically unassisted by immigration, have increased as rapidly as the northern whites assisted by immigration.

Immigration up to 1917 was an important factor in illiteracy, for white illiteracy in the North is practically confined to the foreign-born. In 1907 thirty per cent of the immigrants were illiterate, but this percentage ran as high as 40 for the Poles, 53 for the South Italians, 54 for the Syrians, and 56 for the Ruthenians. On the other hand, it was only 1 per cent for the Scandinavians, 2 for the English, 3 for the Irish, and 4 for the German. Illiteracy, of course, handicaps the immigrant economically and socially and, moreover, prevents assimilation. The tendency to criminality is perhaps not much if any greater among the foreign-born than the native-born, but it is higher among the children, partly at least because of lack of parental control. The South Italians, too, seem more prone to crime, especially to homicide and to crimes of personal violence, than the native-born white. In New York City, for instance, they are convicted of three or four times as much crime in proportion to their numbers as the population as a whole. Poverty and pauperism seem to be nearly twice as great among the foreign-born as among the native-born.

Early Attitude Toward Immigration.—Although Washington, John Adams, and other statesmen were opposed to the uncontrolled influx of immigrants, as proved by the qualifications prescribed for membership in the House and Senate and the presidency, the opposition did not crystallize. True, the Naturalization, Alien, and Sedition acts of 1798 revealed dislike for aliens, especially French. The

first increased from five to fourteen years the time required to make a foreigner a citizen. The second allowed the president for a term of two years "to order all such aliens as he should judge dangerous to the peace and safety of the United States . . . to depart out of the territory of the United States." The third, effective to the close of Adams's administration, provided a fine not to exceed two thousand dollars and imprisonment not to exceed two years, for anyone writing or publishing "any false, scandalous, and malicious writings" or stirring up "the hatred of the good people," by way of sedition, against the government, either house of Congress, or the president.

A century ago a bitter persecution was directed against the Irish because of their religion. Native Americanism developed to fight the efforts of the Catholic Church to influence politics and to secure public funds for the support of the parochial schools. In 1834 a convent near Boston occupied by the Ursuline Sisters was sacked and burned. Eight years later in New York City anti-Catholic rioters attacked churches and dwellings, even smashing windows in the residence of Archbishop Hughes. In 1844 in Philadelphia frenzied rioters assaulted Irish, attacked Catholic churches and schools, and burned shops. Increased immigration in the late forties made the situation worse and in 1850 the Nativists formed the order of the "Star-Spangled Banner" which in five years grew into the powerful "Know-Nothings," so-called because to all questions the members were ordered to reply, "I know nothing." The party elected governors or legislatures in several states, New England, Maryland, Kentucky, and California and a delegation to Congress. But no party founded on secrecy and religious intolerance with a demand for a twenty-one year residence requirement for naturalization can long survive. Friction between northern and southern members developed, and the party split in the presidential convention of 1856. "Like the frog in La Fontaine's fable," says Professor D. S. Muzzey, "it burst in the effort to blow itself up to the size of a presidential ox."

The Civil War slowed up immigrants, but in spite of

the rapid growth immediately after the war President Johnson thought that it would take six hundred years to occupy the public domain. A popular song of the sixties read in part:

> Of all the mighty nations in the East or in the West
> The glorious Yankee nation is the greatest and the best;
> We have room for all creation and our banner is unfurled;
> Here's a general invitation to the people of the world.

Prior to 1861 the regulation of immigration was left to the states, though Congress in 1819 had passed a law intended to provide greater comfort and convenience for steerage passengers on their way to this country. And in 1847 and 1848 in spite of the developing strength of the Know-Nothing Party that law was amended. In 1864 Congress had attempted "to encourage immigration" by providing that laborers might be engaged under contract and that wages might be pledged in advance to pay transportation charges. Four years later, however, this law was repealed.

In 1868 the Burlingame Treaty allowed the Chinese to enter the country and specifically declared: "Chinese subjects visiting or residing in the United States shall enjoy the same privileges, immunities, and exemptions in respect to travel or residence as may be enjoyed by the citizens or subjects of the most favored nations." Even at that, though, naturalization was denied and in 1880 China was forced to agree that the United States might "regulate, limit, or suspend such coming or residence, but may not absolutely prohibit it." In response to western demands, however, Congress restricted Chinese immigration for ten years in 1882 and two years later made the prohibition absolute.

The antipathy to the Chinese had developed in the seventies because of economic and social reasons. American labor was striving to obtain better wages, shorter hours, and better working conditions. Chinese labor, on the other hand, was willing to toil long hours and to live on rice in order to amass a fortune which would allow the owner to

retire to the home country and live on Easy Street. And the same statement will hold true of Japanese and South European laborers. But the San Francisco Chinatown was reeking with vice and opium. Business depression in California in 1877 because of drought, crop failures and the fall of mining stocks, threw hundreds of men out of work. And the Chinese suffered. Dennis Kearney and others preached on "sand lots," "The Chinese must go." Up and down the streets marched the rioters with banners inscribed, "Four dollars a day and roast beef," and into the quarters of Chinatown they stormed with threats of murder. Kearney was arrested, but was soon released by the Supreme Court of California, for the entire region shared the popular antipathy toward the Chinese.

Legislation Since 1882.—Not until August 2, 1882, did the first general immigration law receive the president's signature. It provided for a head tax of fifty cents, prohibited the landing of foreign convicts with the exception of political offenders, and barred lunatics, idiots, and individuals apt to become public charges. Legislation in 1885, amended in 1887, forbade the importation of contract labor. The Law of 1891 added to the barred classes those suffering from loathsome or contagious diseases, forbade the entrance of polygamists, prohibited the entrance of assisted persons "unless affirmatively shown that they did not belong to any excluded class," declared illegal promises of employment through foreign advertisements and the solicitation or encouragement of immigration, and required any steamship company violating the law to deport at its own expense within a year after arrival the undesirable immigrant. Three years later, 1894, Congress doubled the head tax. Early in 1897 it passed an educational test debarring, with the exception of parents and grandparents over fifty, wives, and minor children, all physically capable individuals over sixteen who could not read and write some language. Cleveland vetoed this measure on the ground that it was a radical departure from a successful policy.

The Act of 1907, as amended in 1910, increased the head

tax to four dollars, enumerated excluded classes, prescribed penalties for violation, and made provision for administration. Idiots, imbeciles, feeble-minded, epileptics, insane, paupers or near paupers, consumptives, people with contagious diseases, criminals, anarchists, prostitutes, contract laborers, certain assisted immigrants, and children under sixteen, unless accompanied by their parents, were excluded. Political offenders were exempted, as were assisted immigrants who were merely passing through the United States, imported skilled labor if the supply here was insufficient, and various professional men as well as personal and domestic servants.

In spite of the strong recommendation of the Immigration Commission for restriction and especially for a reading and writing test, President Taft vetoed a literacy test in 1913 and President Wilson did likewise in 1915 and 1917, insisting that the literacy qualification was a penalty upon lack of opportunity in the home land and was not a suitable test of character or personal fitness. Congress, nevertheless, passed the measure over his veto. The head tax was increased to eight dollars and was applied to all except children under sixteen, accompanied by their parents, and aliens journeying to another country. Although the usual exclusions to guard the health, morals, standards, and institutions of the United States were made, the most noteworthy provision was the one requiring, with some exceptions, notably near relatives and those fleeing religious and political persecution, that all aliens over sixteen physically capable of reading should read the English or some other language, including the Hebrew or Yiddish, or be excluded.

Amendments were made in 1918 and 1920 with a view to safeguarding our institutions more effectually against anarchists, and a strong attempt was made to prohibit immigration absolutely for a definite period of time. In 1921, a law effective to June 30, 1922, defined "alien" as any person not native-born or naturalized, exclusive of untaxed Indians and citizens of islands under the jurisdiction of the United States, and limited the number of aliens

admissible in any given year to three per cent of the given nationality resident in the United States in 1910. In spite of the efforts of the Italian government to secure the 1920 Census as a basis, the law, with some modifications, was renewed on the 1910 basis for a period of two additional years. In the original law not more than one-fifth of the allotted number of any nationality was admissible in any one month; preference was to be shown to the relatives and fiancées of citizens, of applicants for citizenship, and

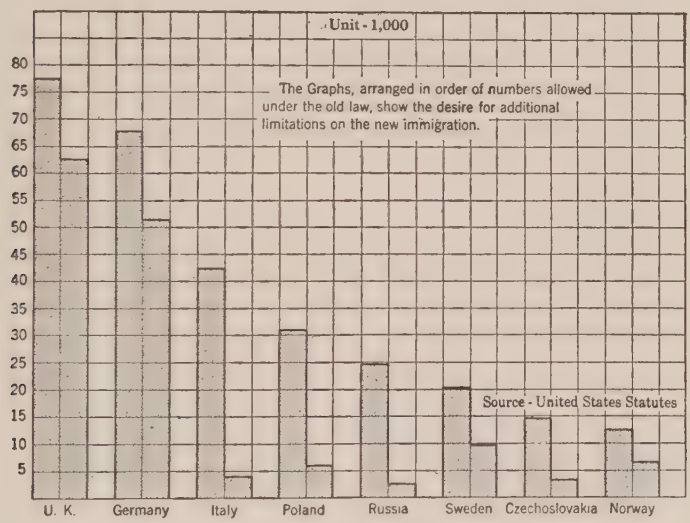

CHART NO. 5. IMMIGRATION UNDER THE RESTRICTIVE ACTS.

of persons eligible to citizenship because of military and naval services. Exceptions were made in the case of government employees and their retinues, business and pleasure seekers, one-year residents of North and Central American countries and Cuba, and children of United States citizens if under eighteen. The three per cent law, it should be noted, did not apply to natives of the new world, or aliens born elsewhere who had resided in new world countries for a year, or to most Asiatic immigration. The quota for all the specified countries was about 356,000.

Many individuals, however, insisted on still greater restrictions, and in the spring of 1924, Congress passed by overwhelming majorities a measure which restricted the annual immigrants from the various countries to two per cent of the number resident in this country in 1890. The total number was thus restricted to about 161,000 and, according to the Senate measure, to 150,000 after July 1, 1927.

One provision, aimed at the Japanese, excluded all aliens ineligible to citizenship. The latter provision, coming after the 1913 California anti-alien land-ownership law, is especially unfortunate, for the Root-Takahira "gentleman's agreement" of 1908, whereby Japan had assumed the responsibility of limiting, through the refusal of passports, the immigration of her laborers, had been faithfully kept for fifteen years. And the Japanese feel that the exclusion feature of the bill is a reflection on their national honor. But the Japanese protest along with President Coolidge's request went unheeded.

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CHAPTER V

AGRICULTURE

Corn.—As early as 1602 Gosnold sowed wheat, oats, and barley on Elizabeth Island on the southern coast of Massachusetts, and in all the colonies the grains were ordered early from England or other European countries.

By far the most important of our crops is corn, a native of the new world, a gift of the Great Spirit, according to Indian legend, and the hastener of settlement and expansion. Planted in the spring and maturing by fall, it furnished with a minimum of effort, food for both man and beast. Perhaps the colonists' first effort to cultivate maize was in the Jamestown Colony in 1608 or 1609, but a year or two later the acreage was not more than thirty. The Pilgrims, taught by the Indians, began with the cultivation of corn at once, for it was a cheap food, matured quickly, gave a large yield, was independent of seasonal changes, and was easily cultivated. The settlers usually followed the Indian methods of planting the corn among the deadened forest trees and allowing it to grow with little or no cultivation. Near the shore, however, small fish were occasionally thrown in the hills with the seed to act as fertilizer.

Just prior to the Revolutionary War the author of *American Husbandry* estimated the cost of culture at one pound, two shillings, and eight pence an acre, and the value of the crop at from two and a half to four pounds an acre. Because of the exhaustive character of the cultivation and the lack of crop rotation he considered "the culture not so cheap as it may appear at first sight." Throughout our history corn has been the leading crop, though it was relatively unimportant in the export trade.

As in colonial days it aided in pushing the settlements westward by providing food for men, for swine, for cattle, and for horses. The soil of the Mississippi Valley proved

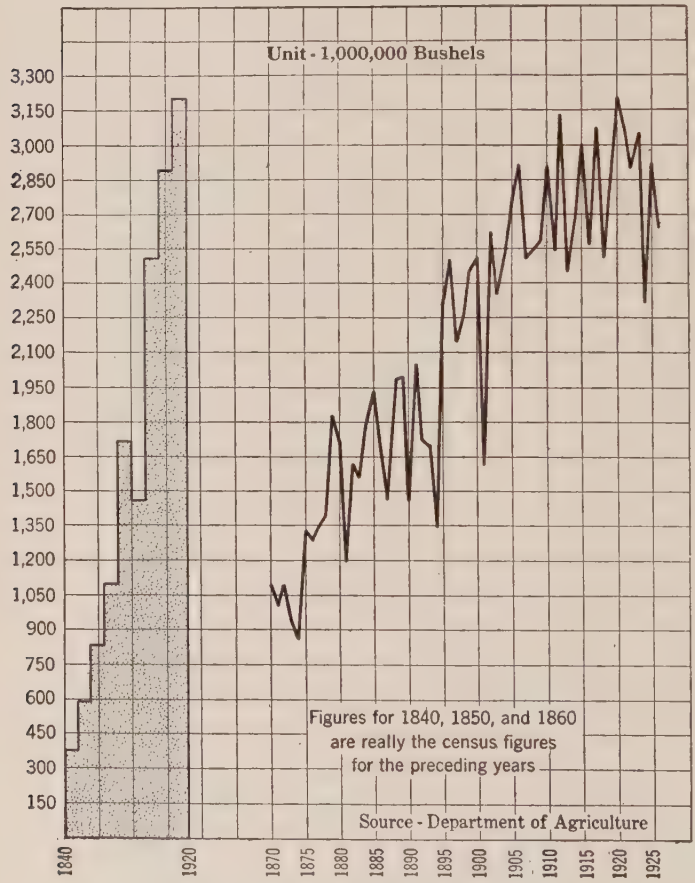
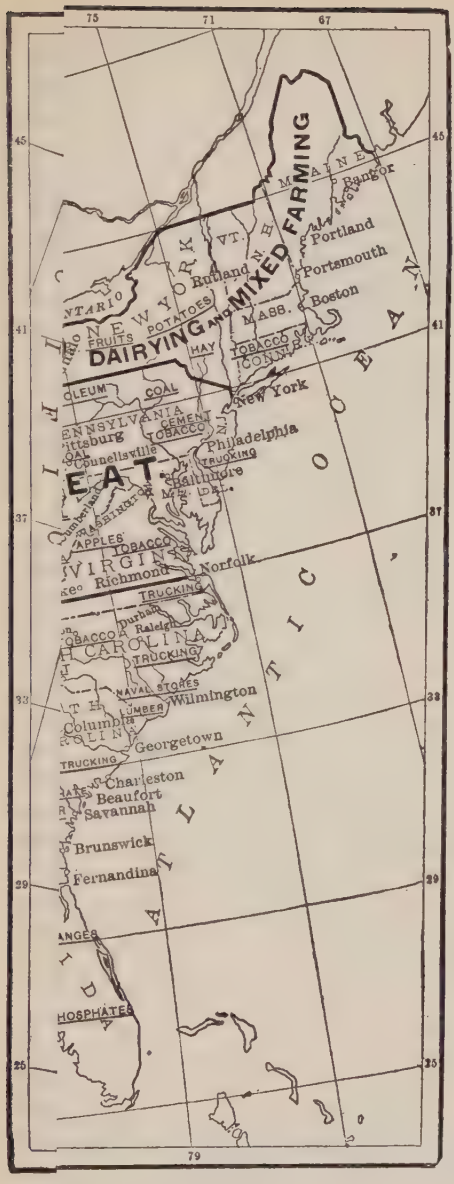


CHART NO. 6. CORN PRODUCTION.

even better for its growth and cultivation than that of the eastern states. By 1860 the six ranking states were Illinois, Missouri, Ohio, Indiana, Kentucky, and Tennessee. Now the main corn belt is composed of Ohio, Indiana,



75
71
67
45
41
37
33
29
25
79
MAINE
Bangor
Portland
Portsmouth
Boston
VT.
N.H.
Rutland
MIXED FARMING
NEW YORK
MASS.
POTATOES
FRUITS
DAIRYING AND
HAY
TOBACCO
CONN.
R.I.
New York
COAL
PENNSYLVANIA
CEMENT
TOBACCO
Pittsburg
Connellsville
Philadelphia
TRUCKING
Baltimore
MD.
DEL.
WASHINGTON
APPLES
TOBACCO
VIRGINIA
Norfolk
Richmond
TRUCKING
Durham
Raleigh
TOBACCO
CAROLINA
TRUCKING
NAVAL STORES
LUMBER
Wilmington
Columbia
Georgetown
TRUCKING
Charleston
Beaufort
Savannah
Brunswick
Fernandina
ANGES
HOSPHATES
ATLANTIC OCEAN

Illinois, and Iowa; the recent leaders, though the order varies, are: Iowa, Illinois, Nebraska, Missouri, Indiana, and Ohio. Production has virtually trebled since 1870, as noted in the accompanying graph. The United States produces from two-thirds to three-fourths of the world's supply. The acreage for the last quarter of a century has averaged about 100,000,000. Although in the early period and yet, yields of fifty to seventy-five bushels have been common, the average has varied little since the Civil War save in occasional bad years. It generally runs from twenty-five to thirty; the highest yield was recorded in 1920 at 31.5 and the lowest since 1896 at 17.0 in 1901. The lowest average farm price for any December 1 quotation since 1896 was 21.3 cents in 1896 and the highest at 136.5 cents in 1918.

Wheat.—Although wheat was cultivated in Virginia almost with its settlement, the early experiments were not very successful. Then, too, tobacco was a far more profitable crop in spite of the bounties offered for wheat production. Within a year or two after its establishment the Plymouth Colony cultivated wheat. New York produced wheat in 1626, and the yields in the Middle Colonies were larger than in New England. The farmers sowed two bushels or more to the acre and reaped from twenty to forty in spite of their crude methods, for the soil was fresh and rich. By 1860 the field of production had shifted west and the leaders were Illinois, Wisconsin, Indiana, Ohio, Virginia, and Pennsylvania. Wheat had an advantage over corn, because it could stand transportation better and because there was a wider market for it, especially after the repeal of the English corn laws in 1846.

At the present time each state of the union, except in New England, has at least ten thousand acres in wheat; the total acreage since 1896 has averaged over fifty millions and in 1919 mounted to nearly seventy-six millions. The total crop produced in that year was second only to the crop of more than a billion bushels in 1915 and the total December 1 farm value of over two billion dollars and average price of $2.149 were the highest in our history.

The highest average yield since 1896 was 17.0 bushels in 1915 and the lowest was 11.5 in 1900. The average yield per acre is only about half that of England and consid-

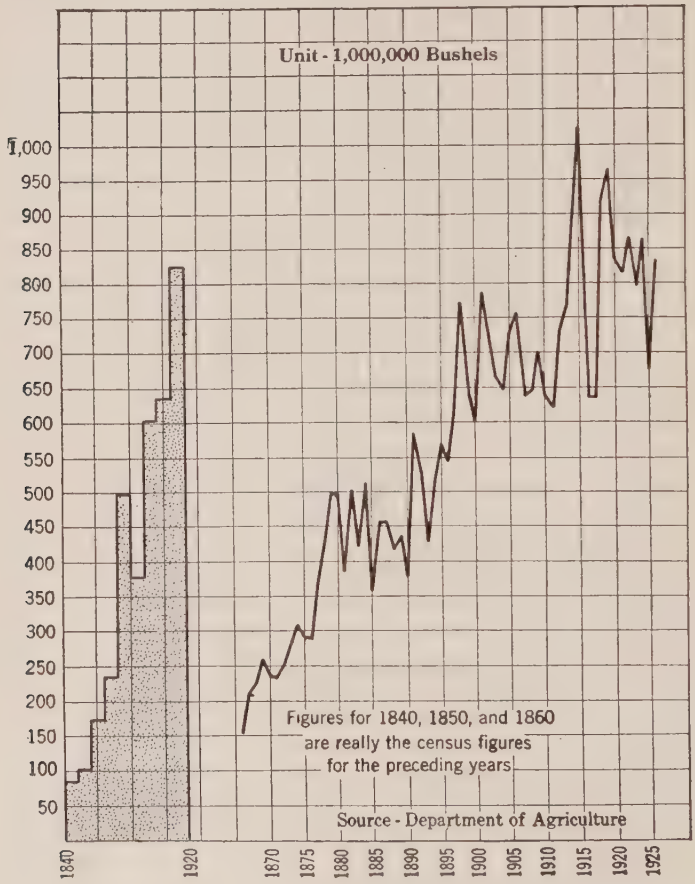


Chart No. 7. Wheat Production.

erably less than that reported for the colonial period. Our smaller yields are due to our extensive cultivation and not to a lack of knowledge; if a larger return becomes necessary, we can produce it by more intensive methods. The

United States produces nearly a fourth of the world's wheat and has led at various times in its export; Canada seems to be the leading exporter at the present time.

Our main wheat belt is in Kansas, the Dakotas, Nebraska, and Minnesota, where the increasing dryness causes farmers to plant wheat in place of corn, for wheat developed from grasses of desert or nearly desert regions. Because the return from wheat is seldom more than twenty-five dollars an acre, and such crops as fruit, sugar beets, hops, and tobacco often yield over a thousand dollars an acre, wheat lands are low in value and agricultural machinery is extensively employed. The population of the wheat belt is low and the necessary labor force must be attracted by high harvest wages.

The wheat of Kansas and Nebraska is different from that of the Dakotas and Minnesota. The southern wheat states tend to specialize in winter wheat which is sown in the fall and harvested in early summer; the northern wheat states, on the other hand, because of the cold weather, plant wheat in the spring and reap it in the late summer. Because the spring wheat is harder than the winter wheat and contains more gluten, it is better for bread making, and so Minneapolis, which has the largest power source near the bread-wheat district leads as a flour-milling section. The rich Dakota fields lie in the bed of an ancient lake and on the "Bonanza Farms," reaching as high as seventy-five thousand acres, enough wheat has been raised in a single year from a single farm to feed eight hundred or more people for a year.

Oats.—The culture of oats, the third important cereal, which will stand a slightly colder climate than wheat, began about 1630 or earlier on the Atlantic seaboard; it was naturally carried westward with the march of settlement. As in the case of wheat, its first great shift followed the close of the Revolutionary War and lasted to the middle of the nineteenth century; in this period the Ohio Valley and the region to the west were entered. The period from 1871 to 1890 was one of rapid expansion in oat acreage, as it was in American agriculture generally, but as expansion

occurred, chiefly in the corn belt, the yield declined. From 1890 to 1905 expansion occurred more slowly and the yield increased. Since then there has been rapid expansion in the upper Mississippi Valley. The acreage reached a high point of over forty-five million in 1921. The yield is ordinarily about double that of wheat and hence the production is higher, occasionally passing the billion and a half bushel mark. Only twice, in 1917 and 1918, however, has the total December 1 farm value passed a billion dollars.

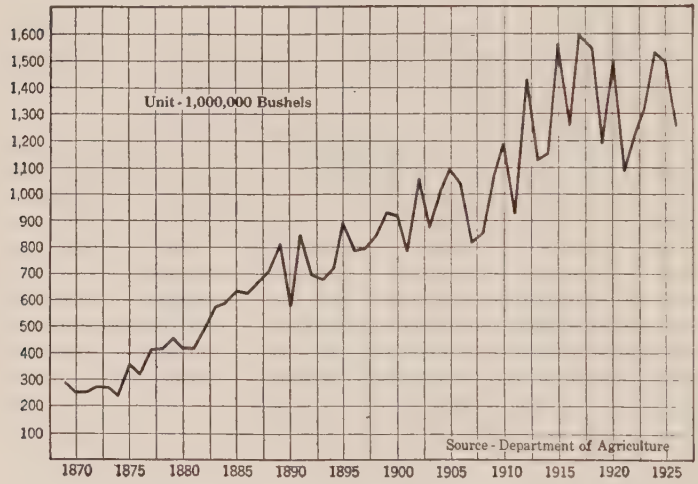


Chart No. 8. Oats Production.

The highest value since 1896 was 70.9 cents per bushel in 1918 and the lowest 18.3 in 1896. Because oats are planted before corn and require little labor until harvest they are important in the corn belt. Iowa, Minnesota, Illinois, and Wisconsin with about two-fifths of our total yield are our usual leaders. The United States produces about one-fourth of the world's crop, with Russia a very close second.

Barley.—Barley, the fourth cereal in importance, was early introduced in the colonies by the Dutch, English, and Spanish, but it did not equal the English article in importance. As was the case with most other crops, production

spread westward. For the ten years, 1913-1922 inclusive, the average production was about 193,000,000 bushels, a small yield in comparison with the other cereals so far noted, but of considerable significance, for a large quantity is grown outside of the region where corn and oats thrive and is used as a grain food for live stock. Barley, in fact, in some sections of the world is ripened 150 miles north of the Arctic Circle. Moreover, its drought-resisting quality makes it important in arid regions. The acreage sown

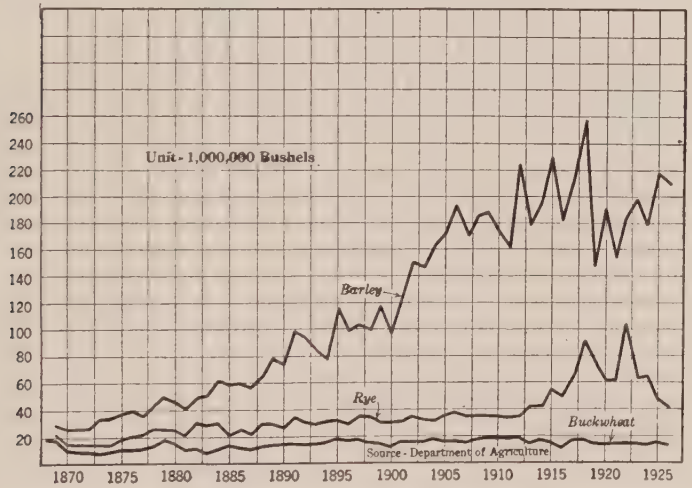


CHART NO. 9. PRODUCTION OF BARLEY, RYE, AND BUCKWHEAT.

to barley mounted steadily from 1866 until 1910 when it reached 7,500,000; since then it has remained practically stationary. The yield has varied little from twenty-five bushels an acre since the Civil War. After the passage of the Prohibition Amendment, barley became less important as a money crop and its acreage as such tended to decrease, but the increase on scattered farms where it was grown for food has balanced this. At no time has the estimated farm value on December 1 reached $250,000,000, though it was not far from that in 1917 and 1918. North Dakota, Minnesota, and California were the 1925 leaders. The United

States produces about one-seventh of the world's crop, whereas in pre-war times Russia produced over a fourth of the crop and supplied more than half of the export.

Rye.—Rye was more important to the northern settlers during the colonial period than to those further south. It now grows about three hundred miles north of the winter wheat belt and enlarges farm activity in the spring wheat belt, for being a fall-sown crop it can be harvested before wheat is ready. It grows, too, more successfully than wheat on poor soils and is less damaged by rust and insect pests. In 1636 in Massachusetts about thirty plows were employed in grain cultivation, chiefly with rye. Rye was raised by the Dutch settlers as early as 1625 and by the Swedes shortly after their settlement on the Delaware in 1638. In the North rye flour and corn meal were the chief foodstuffs. The earliest agricultural census, 1840, showed little rye raised south of the Potomac. The acreage trend was downward, 1867-1872, upward, 1873-1882, practically stationary, 1882-1912, and greatly accelerated, 1913-1919. Even in 1919, however, it formed only four-fifths of one per cent of the total value of the twenty principal crops and occupied only two per cent of the acreage. The per capita production, moreover, was less in 1919 than in 1839, and only a tenth of that of wheat. The sandy sections of the Great Plains area were formerly important in production, and now the sub-humid lands of the northern Great Plains area occupy an important place. At no time has our rye production reached 100,000,000 bushels, though it was little short of that in 1922, and only three times, 1917-1919, has the value passed $100,000,000. The yield is generally slightly more than that of wheat and the price about a third less. The two leading states, North Dakota and Minnesota, produce from a third to a half of our crop. The United States produces only a fiftieth of the rye crop of the world, whereas Russia before the war produced over half and Germany over a fourth.

Rice.—Rice has long played an important part among the food grains of the world. Its production in this country really began as the result of the experimental planting

in the governor's garden in Charleston, South Carolina, in 1694. By 1712 over three million pounds of cleaned rice were exported and by 1770 about seventy-six million

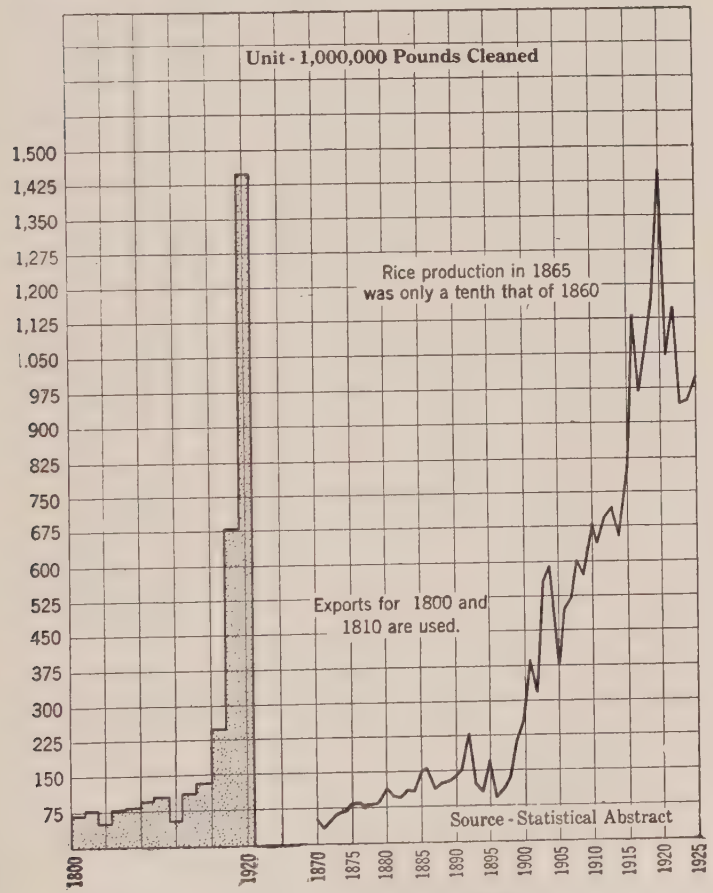


CHART NO. 10. RICE PRODUCTION.

pounds. The foreign exports began to decline about 1794 as the result of increased domestic use. In 1839 nine-tenths of the rice was raised on the tidal lands of South Carolina, North Carolina, and Georgia; twenty years later

the proportion was the same. The Civil War, however, injured production because of the destruction of property and the scarcity of money and labor. In the late eighties the level tracts of Louisiana were used, and later similar lands capable of irrigation were developed in southeastern Texas and eastern Arkansas. On many of these fields the modern methods of wheat harvesting are applied. In 1889 Louisiana, which a half century earlier produced less than four per cent, took first place; it now produces about half the total. Arkansas, Texas, and California followed in order in 1925. The production of rice in the last hundred years has increased from about sixty million pounds of cleaned rice to more than a billion. In some parts of the country, as southwestern Louisiana and southeastern Texas, it is practically the only source of income. Some of the parishes and counties in these districts devote three-fourths of their cultivated land to rice growing. Our production, however, is less than one per cent of the world's supply, which is furnished chiefly by eastern and southeastern Asia.

Other Grains and Relative Importance.—Space will not permit a discussion of the various grain sorghums introduced in the last quarter of the nineteenth century, or of flax, introduced as early as 1620 and used chiefly as a "pioneer crop in breaking new land," or of buckwheat, introduced in early colonial days, raised generally on the poorer lands, and now produced to the extent of three-fifths of the total crop in Pennsylvania and New York. A sentence from the 1922 *Year Book* of the United States Department of Agriculture may, however, be quoted on the latter, for it indicates the relative importance of the grains just discussed: "For every bushel of buckwheat produced in 1922 there were produced 192 bushels of corn, 57 bushels of wheat, 81 bushels of oats, 12 bushels of barley, 6 bushels of rye, and nearly three bushels of rice."[1]

Tobacco.—Rice, introduced in 1694, and indigo first cultivated by Eliza Lucas on the Ashley River in 1741, were exclusively southern colonial crops, but tobacco,

[1] Pages 546, 547.

though not exclusively southern, was a far more important crop. It was first mentioned by a European apparently in the diary of Columbus under date of November 20, 1492. Perhaps it was first introduced into England by John Hawkins in 1565, though another account tells how a servant of Sir Walter Raleigh proceeded to save his master from death by burning when he saw him smoking. The Jamestown settlers copied the Indian methods of cultivation and by 1615 had the gardens, fields, and streets of their town filled with tobacco. In 1619 the Virginians began their commercial exportation with a consignment of twenty thousand pounds. New York began the cultivation in 1646 and Louisiana in 1718. By 1664 the tobacco exports of Virginia and Maryland reached twenty-four million pounds and by 1770 they were four times as great. The Revolutionary and Napoleonic wars checked expansion in the production and exportation of tobacco, but during these decades it became increasingly important in Ohio, Kentucky, and Tennessee. In 1839 Virginia and Kentucky produced three-fifths of the crop and twenty years later half. When the Civil War hindered production in Virginia, North Carolina, Maryland, and Tennessee, Kentucky came to the front. (See chart on page 102.)

In 1866 the estimated area in tobacco was a little more than half a million acres, and not until thirty-three years later was the million mark passed. From 1904 to 1909 there was a period of reduced acreage, but the average then went up, approximating two million for 1920, but was reduced the next year by low prices. The yield fluctuates widely, the lowest average for half a century being in 1869 at 569 pounds, and the highest in 1911 at 894. The largest crop ever grown was in 1920, amounting to nearly 1,600,000,000. Our production is normally more than a third of the world's output. Statistics may be obtained from the accompanying graph. Kentucky, North Carolina, and Virginia turn out over two-thirds of the product. Because of the superior quality of its tobacco, North Carolina generally leads Kentucky in value of product.

Cotton.—Although cotton was produced to a minor ex-

tent in the colonies, it was relatively unimportant, for tobacco in Virginia and Maryland, rice in South Carolina and Georgia, and naval stores in North Carolina proved more profitable. Again, under the mercantile system England frowned upon colonial manufactures. The most important drawback, however, was the difficulty and expense encountered in separating the fiber from the seed and other impurities, for a man could clean only one pound of the short staple and ten of the long in the course of a day.

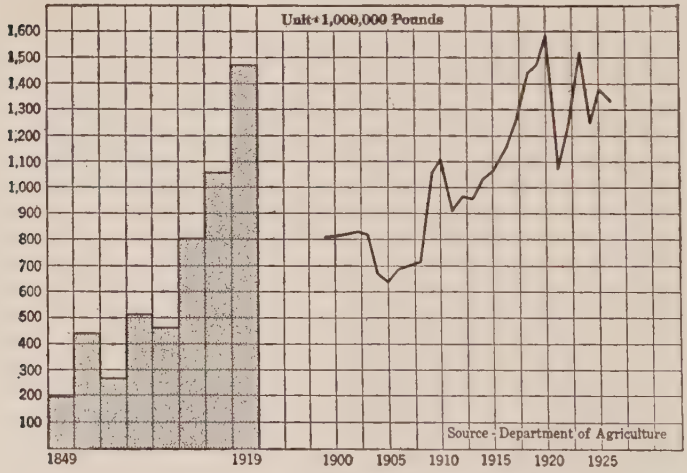


Chart No. 11. Tobacco Production.

When the Revolutionary War broke out, the demand increased, English restrictions disappeared, and production increased slightly. Georgia took the lead and began to cultivate cotton for export, but as late as 1789, according to Woodbury, the total for the United States was only a million pounds. Production increased rapidly after Eli Whitney's invention of the cotton gin in 1793; in 1800 it was about thirty-five million pounds; in 1805, twice as much; and in 1807, eighty millions. On the first date slightly more than half was exported and on the last about four-fifths. Before the invention of the cotton gin South

Carolina and Georgia were the only important cotton-producing states, but by 1801 Virginia, North Carolina, and Tennessee contributed nearly a fourth of the total and by 1811 Louisiana added a little, but even then South Carolina and Georgia produced nearly three-fourths. Under the stimulus of high prices and easily-controlled slave labor the Southwest was speedily conquered by cotton, which, in the period prior to the Civil War, became "king of exports." Cultivation received occasional checks; thus, in 1845 the price of cotton fell to six cents and capital was diverted to more profitable undertakings, but not for long, for English and French manufactures expanded and under rising demand the price went to fourteen cents a pound. The production 1820-1840 doubled each decade and by 1860 it had trebled over 1840 and was close to four million bales. The main cotton-producing states—Mississippi, Alabama, Louisiana, and Georgia—produced three-fourths of the total supply. (See chart on page 104.)

The effect of the Civil War upon cotton, as upon most southern products, was bad. The cotton crop decreased nearly half, 1860-1870, and it was nearly twenty years before the pre-war record was passed. Immediately after the war, however, in response to the stimulus of forty-three cents a pound in 1865 and thirty in 1866, farmers, in spite of lost buildings, tools, capital, cattle, and labor, attempted to revive production, an effort which led to over-production, falling prices, and a one-crop system. Recent production is shown in the accompanying graph. The acreage in the last quarter of a century has varied little from twenty-five million to nearly double that amount. The decrease in production was due primarily to the ravages of the boll weevil, which also furthered diversification of crops. The high price was set in 1919, the only year when the value passed the two billion dollar mark; the average farm price December 1 of that year was 35.6 cents a pound. The lowest point of the twentieth century was set in 1914 at 6.8 cents, as a result of the heavy production and the slack demand. The United States normally produces from one-half to two-thirds of the world's supply.

The leading states in 1925 were Texas, with nearly a third of the total, Mississippi, Oklahoma, Arkansas, Alabama, Georgia, and North Carolina.

Hay.—Hay was early introduced in the colonies. Red clover, sainfoin, yellow clover, and white or Dutch clover all came by 1700, but the cultivation of timothy, according to Jared Eliot, did not begin until near the middle of the

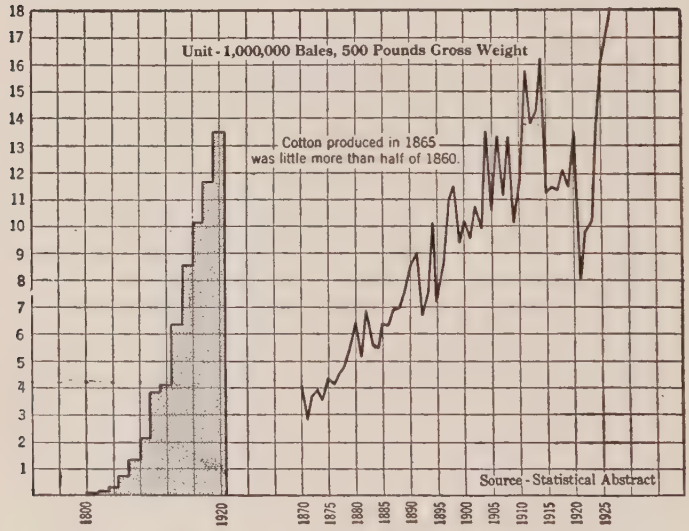


CHART NO. 12. COTTON PRODUCTION.

eighteenth century. It was probably found near Piscataqua and was later taken to Virginia and Maryland by Timothy Hanson who gave his name to the product. By 1849 the total production of hay was close to fourteen million tons; since 1896 it has never been below fifty millions. It is now about double that amount. Acreage is about two-thirds as great as tonnage. The lowest average farm price for the century on December 1 was in 1905 at $8.59 a ton; the highest came in 1918 and 1919 respectively at $20.13 and $20.08. The latter price was sufficient to set a value of close to $1,750,000,000, the highest value of

our history. Hay, of course, is widely distributed, no state being without a recorded product, but because of the conditions the need is less marked in the South than in the North. New York, Wisconsin, California, Pennsylvania, Iowa, and Minnesota were the 1925 leaders with from nearly seven to more than four million tons of tame hay each.

Sugar.—The colonists obtained their early sugar supply in part from the West Indies, but they also attempted cultivation. A small sugar mill erected in Louisiana in 1759 proved a failure because of deficient skill and capital, but in the early nineties destruction of the indigo crops by insects led to the renewal of sugar cultivation. And in 1794 Etienne Bore, by demonstrating that the juice of Louisiana sugar could be made to crystallize, laid the foundation for the modern sugar industry. By 1800 Louisiana was producing a million pounds of sugar yearly and eighteen years later twenty-five times as much. The tariffs of 1824 and 1828 protected sugar and thus encouraged its production, the average, 1840-1845, partly because of low prices for cotton, rising to 125,000,000 pounds. The high point up to 1860 was set at an average of 347,000,000 pounds, 1850-1855. The Civil War, as in the case of southern crops generally, had a disastrous effect, production falling to 11,200,000 pounds in 1865.

Because of exacting labor and climate requirements beet sugar was slow in getting a start, less than three million pounds being reported in 1880. But in the first decade of the twentieth century, 1906, beet sugar production definitely passed the cane sugar and is now much higher. The possible beet area of the United States is several times as great as the possible cane area and seems to follow rather closely the July isotherm of seventy degrees. Colorado, Utah, California, Michigan, Nebraska, and Idaho are the leaders, though the order occasionally changes. But even though beet sugar is more important in the United States than is cane sugar and even though in the five years prior to the World War it averaged forty-six per cent of the world's production, the proportion for the five years

after the war was only a fourth, chiefly because of decreased production in Europe and the revival of the cane industry in Cuba. In production Cuba, India, and Java in that order are ahead of the United States.

Potatoes.—Of the long list of vegetables produced in this country space will permit the discussion of only two—Irish potatoes and sweet potatoes. Both of these, like maize, tobacco, timothy, and the less important tomatoes, cran-

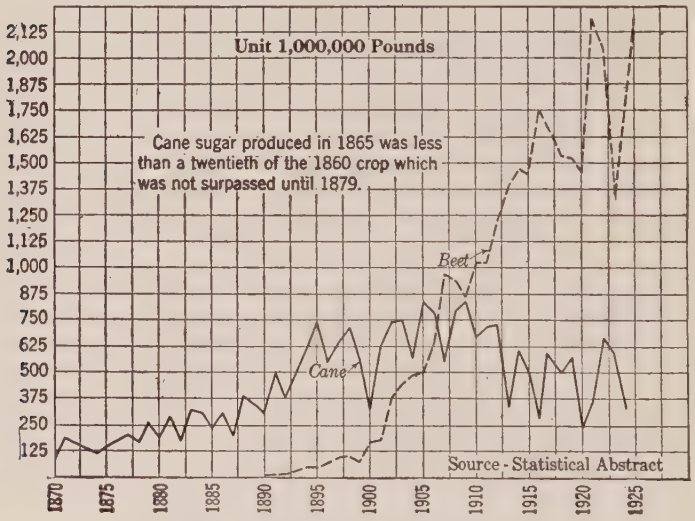


Chart No. 13. Sugar Production.

berries, pumpkins, squashes, peanuts, strawberries, and orchard grass, are natives of America. The sweet potato was generally raised in the southern colonies and states; the white potato was more popular in the North. The latter was probably carried from Peru or Chile, where it was native, to Spain about 1550; from that country it spread to other European lands and then came to North America. Potatoes were not common in New England, but on the rich soil of New York large crops were produced. The author of *American Husbandry* even repeats with every evidence

of sincerity: "I have been assured that from five to eight hundred bushels have been often gained on an acre."

Potatoes, because of their food value, were early produced in all the states. In 1849 the production of Irish potatoes was nearly sixty-six million bushels and in 1922 the high point, almost seven times as much. The acreage for the last twenty years has not fallen below three millions nor the farm price below 44.8 cents (1904). The

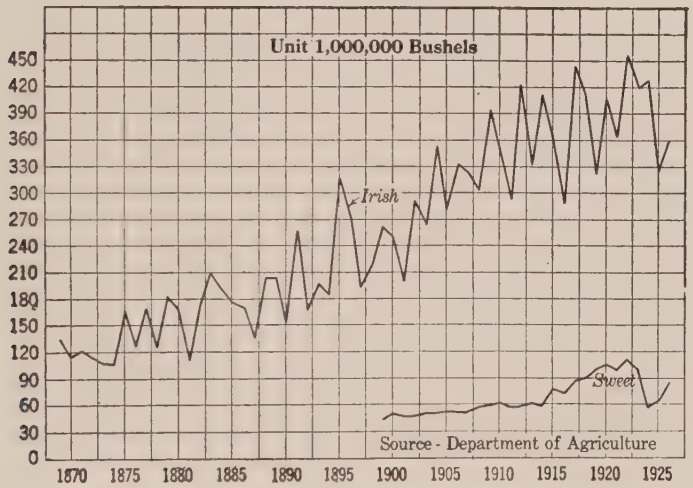


Chart No. 14. Potato Production.

highest point in acreage was set at 4,384,000 in 1917 and in price at $1.872 in 1925. The average yield is in the neighborhood of a hundred bushels to the acre, though in 1924 it went to 127. The 1925 leaders were Maine, Minnesota, Pennsylvania, Michigan, New York, and Wisconsin with a production ranging from about thirty-four million bushels to more than twenty-three million. The production of sweet potatoes amounted to over 38,250,000 bushels in 1849 and to nearly 110,000,000 bushels in 1922, the banner year. The yield is approximately the same as that of Irish potatoes and so is the farm price. The highest

average value of the century was in 1925 at $1.369. North Carolina, Texas, Mississippi, Louisiana, Georgia, and Alabama are the usual leaders in sweet potatoes.

Fruits.—Possibly the first American apples were produced on Governor's Island in the harbor of Boston in 1639. A year later Governor Endicott sold from his farm in Salem, perhaps the first nursery, five hundred apple trees for half as many acres of land. Some critics praised our fruits and others condemned them. Flint declares that at the end of the eighteenth century the varieties were fewer than any good farming town of 1860 could boast. Small fruits in 1919 made up about a twelfth of the total value, orchard fruits about three-fifths, and sub-tropical fruits nearly a sixth. Apples ranked first with a value of nearly $250,000,000; grapes, peaches, nectarines, and oranges followed in order with values slightly less than $100,000,000. The leading apple-producing states are generally Washington and New York. At the time of the last census, Virginia, California, Arkansas, Oregon, Michigan, Pennsylvania, and Missouri followed in the order named; the three Pacific States produced over a fourth of the total. California, important in tropical fruits, also produced four-fifths of the grapes, nearly a third of the peaches, about two-thirds of the plums and prunes, and with the other two Pacific states, nearly half of the pears.

Effect of Various Wars Prior to 1860.—Reference having been made to particular crops, the influence of certain wars may now be noted. Although unpatriotic farmers during the Revolutionary War sometimes made money by selling their products to the British for gold, the patriotic farmer generally suffered by turning his products over to the American army for depreciating paper money. Many farm laborers were taken from the farms and used as soldiers and this diminution of labor caused a decrease of crops and a heavy loss to the farmers. In the South the indigo farmers were injured by the loss of the English bounty and the seizure of Carolina slaves had a bad effect on rice cultivation. So, too, the destruction of sheep by British raiders in the Carolinas caused suffering. The

British after the war no longer took the American tobacco in such large amounts. And England's refusal to open the West Indies to our trade deterred some of our farmers from cultivation on a commercial scale. Again, many men by quitting their homes and engaging in military pursuits promoted dissipation and inspired ideas "very incompatible with the humility of agricultural life." The money which had formerly been used for tillage and improvement went in part at least for the discharge of old debts and the payment of heavy taxes. These drawbacks of war and disorganization were gradually wearing away, but Phineas Bond, writing about 1789, did not yet consider agriculture equal to that in 1774.

In the period from 1793 to 1807 agricultural products brought high prices because of the European wars. France and England with their allies, busy in fighting, had to buy foreign products, and the United States consequently profited through increased exports at increased prices. The commercial restrictions by warring nations, however, led to the passage of the embargo, which was effective from December 22, 1807, to March 1, 1809. And that measure had a bad effect on agriculture, for

> . . . Prices of agricultural products went down, imported articles went up, land and slaves depreciated in value, mortgages were foreclosed or stay laws were forced through, speculators thrived by buying up products from farmers at low prices, and money lenders obtained exorbitant interest. In short, many a large estate was lost in whole or in part, many an aristocratic planter went to the wall, and many a poor farmer with his wife and children suffered for the actual necessities of life in the way of clothing if not of food. With his products well-nigh unsalable and his credit poor, the farmer certainly had "a hard row to hoe."[3]

Although non-intercourse and war followed during part of the period, the average export price of wheat and flour at the principal ports was $1.50 a bushel for wheat, 1806-

[3] Jennings, W. W. *The American Embargo*, 1807-1809 [University of Iowa, Iowa City, 1922] 202, 203.

1813, and $8.33 a barrel for flour, 1806-1814. Wheat and flour were higher in 1811, 1812, and 1813 than at any other time in this period. The war, it is true, withdrew men from agriculture and slowed up agricultural improvements, but farmers were not entirely prevented from shipping agricultural products to other countries.

The Mexican War, 1846-1848, was so short and decisive and so far removed from our soil as to have little effect on agriculture. It resulted, however, in territorial acquisitions which increased our agricultural wealth.

Civil War.—The Civil War, 1861-1865, exercised a profound effect on both the North and the South. When the war broke out, thousands of men in both sections were called from the fields, but in the North their places were taken by improved machinery and to some extent by immigrants. By 1864, 250,000 reapers were in use. Improved implements and high prices stimulated grains in a marked way. Indiana with one-tenth of her male population in the army in 1863 yet raised one-third more wheat than she had done in 1859. From 1861 to 1870 about 2,400,000 immigrants came to this country, most of them settling in the northwestern states where they aided modern machinery in increasing production. Corn, rye, and buckwheat decreased in the census years, but wheat, oats, barley, hay, and potatoes registered marked increases. In the main northern crops, the Civil War had little detrimental effect; there was, in fact, a marked increase in the ten-year period.

But the effect was otherwise in the South. Cotton, which the South had expected to win the war, was shut off from European markets by the northern blockade. Other staple products also glutted southern markets. Moreover, with the removal of so many southern whites from the fields machinery was destroyed, fences became dilapidated, weeds grew more common, and agriculture declined. But even though foodstuffs rose in value through depreciated currency, the South was not starved. The breakdown of its transportation system or the control of the main lines by the North merely prevented food supplies from being carried from one section to another. After the war large

plantations fell to a small fraction of their value and all farm property declined forty-eight per cent in a decade. Mississippi in 1867 had 412 farms of less than ten acres, but 10,003 in 1870. From 1860 to 1870 southern farms fell in average size from 401.7 acres to 229.8, those of less than a hundred increasing fifty-five per cent. Not until a dozen years had passed did cotton, rice, sweet potatoes, and some other crops approach the normal yields of the pre-war period. Better methods and a greater diversification of crops, however, developed in time, perhaps due in small part to the war.

World War.—When the World War broke out in Europe in 1914 the contending nations strained every nerve to win the struggle. And so the neutrals, as during the Napoleonic wars, by supplying desired products reaped rich rewards. The United States as the greatest neutral made big gains and some of her bumper crops came from 1914 to 1920. Wheat in 1915 for the only time in our history passed the billion bushel mark. And with big crops came high prices. Number 1 Northern spring wheat which had been quoted at eighty-nine cents a bushel in Chicago in 1914 went to $1.66 in May, 1915, and to much higher levels during the period. Other cereals likewise registered big gains. In 1916 and 1917 the wheat crop was off about a third from 1915, but thereafter production increased. The The Food Control Act of 1917 gave authority to guarantee wheat prices provided the prices for 1918 wheat were "based on number one Northern spring or its equivalent at not less than $2.00 per bushel at the principal interior primary markets." Herbert Hoover, Federal Food Administrator, urged the people to save wheat, meat, milk, fats, and sugar, and to use perishable foods, depending upon local supplies as much as possible. Early rules required the observance of one wheatless day weekly and limited the use of beef, mutton, and pork to once daily. Foodstuffs were exported to the allies, at first for profit but soon for patriotic motives, for we entered the war on their side. In 1914 foodstuffs in crude condition and food animals and foodstuffs partly or wholly manufactured constituted little

more than eighteen per cent of our total exports, but in 1915 over thirty-five per cent and the proportion for the next four years was about a fourth, though fluctuations occurred. In 1919 it was over a third, remaining high because a war-devastated Europe still needed our supplies. And, as previously noted, prices were high.

In 1917 the oats crops set a high point with nearly 1,600,000,000 bushels. Corn almost reached 3,000,000,000 bushels in 1915, was a partial failure in 1916 but passed 3,000,000,000 bushels in 1917 and in 1920, the high point, went to 3,200,000,000. The largest cotton crop in our history, prior to 1926, came in 1914 with 16,134,930 bales. Because of this big production and the European War cotton touched a low price of 6.6 cents a pound, January 1, 1915, leading to the "buy a bale movement." But the decline of little over a cent was less than had been expected. And soon came a demand from American textile mills and from munition plants both here and abroad. In 1916 there was a short crop and the price passed nine cents a pound. Our cotton planters then entered an era of prosperity, prices rising much as in the case of other commodities, peak prices being set in 1920, spot middling uplands at New York averaging 42.3 for April.

Although the immediate effect of the war was thus beneficial, the long-run effect was bad. Farmers expected high prices to continue and so renewed old leases at higher rents or bought land on credit expecting to pay for it with crops sold at the usual high prices. But prices fell. Wheat, which had sold in the winter of 1919 and 1920 for over $3 a bushel and corn which had passed $2, had dropped to $1.90 and 67 cents respectively by January 19, 1921. Hams and bacon, which had sold for 38 and 33 cents a pound respectively in July of 1919, went to 18 and 16 in January, 1921. And most other prices fell in like proportion. Land values, which had doubled or perhaps increased two and a half fold, 1910 to 1920, went down a fourth, a third, or even more in some localities. In 1921 the products produced on the farms were worth less than half as much as they had been in 1919, the high point of about $23,500,000,000.

Although values have since risen, the farmers have not yet recovered from the slump following war and post-war expansion, a slump which revealed itself in increased mortgages, lost farms, and failures of banks, generally small, which had advanced too much money to farmers when land values were high, and were unable to realize sufficient cash on the sunken farm properties accepted as security.

Methods.—In the more than three centuries since the first English colony was established methods have changed materially and agricultural implements have improved. Peter Kalm, a Swedish traveller, said of the James River Colony in 1748 and 1749, that little manure was used for the corn, that the soil was cropped, and that the crude wheel plow would plow neither deep nor straight. The author of *American Husbandry* condemned tillage "as being weakly and insufficiently given: worse plowing is nowhere to be seen." In New England the furrows were shallow and unlevel, the ground scratched rather than turned; possibly the methods of the Middle Colonies were better. Little change had occurred by the close of the century and so Tenche Coxe characterized agriculture as "in point of execution," though the "best of pursuits," the "most imperfectly conducted." He said in part:

> The proofs are, innumerable instances of impoverished lands, precious bodies of meadow lands, in the old settlements of some of the states, which remain in a state of nature, a frequent inattention to the making or preserving of manure, as frequent inattention to the condition of the seed grain evidenced by the growth of inferior grain in fields of wheat, and by the complexion of flour in some quarters; the bad condition of *barns*, stables and fences, and in some places the total want of the former, the deficiency of spring-houses or other cool dairies in extensive tracts of country, the want of a trifling stock of bees, the frequent want of orchards, and the neglect of those which have been planted by preceding occupants, the neglect of the sugar-tree, the neglect of fallen timber and fuel, accompanied with the extravagant felling of timber trees for fuel; the neglect of household manufactures in many families, the neglect of making potash, the non-use of oxen, and above all, the growth in substance, of large bodies of farmers on lands of an ordinary

quality, while the inhabitants of extensive scenes hardly extract, from much superior lands, sustenance and clothing.

It is a fact very painful to observe and unpleasant to represent but it is indubitably true, that *farming,* in the grain states, their great best business, the employment most precious in free governments, is, too generally speaking, the least understood, or the least economically and attentively pursued, of any of the occupations which engage the citizens of the United States.[8]

With better implements, the breaking down of old traditions, the increased use of various fertilizers, the spread of crop rotation, the scattering of agricultural knowledge through the rapidly developing agricultural press and the Agricultural and Mechanical Arts Schools, the growth of farmers' organizations of various sorts, the activities of the county agents, the fairs and demonstrations, short courses, and other means, agricultural methods have improved in a marked way. Here space will permit only a short reference to a few.

Machinery.—The spades, hoes, mattocks, scythes, hay forks, harrows, plows, and other implements of colonial days were cumbersome implements made generally from wood. In 1637 there were only thirty-seven plows in New England and eleven years later only 148 in Virginia. Because of the scarcity in many sections of New England, owners of plows were paid to keep their implements in condition and to go from place to place for work much as owners of threshing machines do to-day. In colonial days grain was threshed by a flail or by driving cattle over it; in 1791 a patent was taken out for a threshing machine, but not until after the Civil War did the steam threshing machine become popular. As early as 1740 James Small of Scotland had made a cast-iron mouldboard for the plow, but cast iron was not used in the iron share until 1785. Charles Newbold of New Jersey took out the first patent for a cast-iron plow in this country in 1797. The next year Thomas Jefferson wrote a scientific treatise on the form of the mouldboard with a view to the lessening of the friction. In 1807 Peacock took out a patent and in 1814 and 1819

[8] *A View of the United States* [Philadelphia, 1794] 358.

Jethro Wood of New York secured patents. Only gradually, however, did the heavy wooden plows and those with iron strips give way to the cast-iron plows, for many farmers believed that the iron poisoned the soil and killed the crops. Not until 1837 did John Deere construct the first steel plow from an old saw blade; soon came the gang plow drawn by five horses and making possible the plowing of five acres a day. In more recent times the 110 horsepower machine plows a strip thirty feet wide at the rate of four miles an hour and harrows at the same time. Thus, under favorable conditions, from ten to twelve acres may be planted in an hour, the work done being equivalent to that ordinarily performed by forty or fifty teams and men.

In the period from 1833 to 1866 the old hand methods were changed to machine methods. Various men, such as Schnebley, McCormick, Manny, Atkins, and Hussey, were working on reaping machines in 1833 or the years immediately following. To Obed Hussey of Baltimore apparently goes the credit for the first successful patented machine. William Manning of New Jersey probably had the first mower, patented in 1831. At the Paris Exposition in 1855 American reapers, mowers, and threshing machines scored notable victories over all competitors, proving two or three times as efficient as their foreign rivals. The Civil War, by drawing off the able-bodied farm population, stimulated the introduction of machinery. Some people go so far as to say that the North won the war through the reaper.

Improvements continued after the Civil War. Steam was substituted for horse power and two notable inventions, the twine binder and the roller process of flour manufacture, stimulated agriculture in a marked way. When labor is scarce, the amount of wheat a farmer can grow is limited by the difficulty of harvesting it; the invention of the twine binder increased the amount he could harvest and hence profitably grow. The per capita production of the country increased from 5.6 bushels in 1860 to 9.2 bushels two decades later. The roller process in manufacturing flour from spring wheat prevented discoloring and

spoiling of the flour and was largely responsible for the doubling of population in Minnesota and the Dakotas, 1870-1880.

Among the other improvements were the check rower, the lister, the weeder, riding cultivator, two-row cultivator, cotton-seed planter, fertilizer distributor, cotton-stock cutter, sugar mill machinery, various sorts of plows, including the large tractors already noted, and corn shredders, silos, etc. The development in the use of machinery is apparent when we note that the average value per acre of farm land increased from 52 cents in 1850, to 90 in 1900, to $1.44 in 1910, and to about $3.76 in 1920. The effect of this improved machinery has long been noticeable; it has displaced farm labor and helped crowd the cities, but it has also lightened the drudgery of farm life. By the close of the nineteenth century fifty men with good machinery could do more work than five hundred without it. One of the most notable savings was in wheat cultivation, the labor time for producing one bushel being reduced from three hours in 1830 to ten minutes in 1896.

Crop Rotation and Use of Fertilizers.—In the early period of our history tradition played an important part in agriculture. Farmers insisted on planting their crops at the same time and using the same methods that their grandfathers had used. With the exhaustion of the farm lands more attention was gradually paid to crop rotation and the use of fertilizers. The former led to many benefits, chief among which were: increased fertility of the soil at less expense than by the use of fertilizers alone, insurance against total loss through the failure of one staple crop, and the eradication of many weeds through the production of crops that could be harvested before the weed seeds were ripe. As late as 1849 our production of commercial fertilizers amounted to less than $1,000,000, but fifty years later to almost $45,000,000 and in 1919 to $326,399,800. In each decade practically all of the money has been expended east of the Mississippi and most of it in the states which border the Atlantic.

Education.—Agricultural education has been of impor-

tance from our earliest history. Societies formed shortly after the Revolutionary War awakened inquiry and thought, and so paved the way for a farm literature. Between 1785 and 1794 societies were organized in South Carolina, Pennsylvania, New York, Massachusetts, and Connecticut. These organizations published books, pamphlets, and papers and blazed the path for the agricultural periodicals and newspapers which started in the first quarter of the nineteenth century and attained respectable dimensions by the Civil War period. Agricultural fairs began about 1810 and have persisted to the present day. With the expositions, they have increased the interest and promoted the education of the farmers. A department of agriculture was created in 1862, and in the same year Congress passed an act to encourage education in both agriculture and mechanic arts. Each state was allowed thirty thousand acres for every senator and representative in Congress and in each state at least one college was to be formed to teach "all the needful sciences for the practical avocations of life" and make earnest friends and students of "agriculture, the foundation of all present and future prosperity." The proceeds of the land sales were to be kept in trust. States were required to provide for the location, management, and taxation, and to open the school within five years after accepting the provisions of the national law. In 1866 the provisions of the act were extended to any territory that might become a state.

In 1914 the Smith-Lever Extension Act appropriated $480,000, or $10,000 to each state. An additional grant of $600,000 was made and thereafter the amount was to be increased $500,000 each year until 1923, when the total appropriation would amount to $4,580,000. Except for the original $480,000 the amount received by each state was apportioned according to its rural population; the states were required to contribute an equal amount. The land grant colleges by 1923 had increased to 68, of which 24 were state universities, 27 colleges, and 17 institutions for colored persons. The enrollment in these schools is approximately 200,000. According to Patterson's 1925

American Educational Directory there were 137 agricultural schools in the country. Usually agricultural experiment stations, granted Federal support by the Hatch Act in 1887, are connected with the land grant schools. The Adams Act of 1906 provided much more effectively and adequately for investigational work. And the Purnell Act of 1925 authorized an additional appropriation of $20,000 for the year ending June 30, 1926, and $10,000 more each year until the amount reached $60,000. Experiment stations save the farmers millions of dollars each year. Many of the colleges offer short courses in the winter so that practical farmers, their wives, sons, and daughters may be given intensive training for a few weeks. They likewise run special excursions in the summer for the purpose of demonstrating the work of university farms and in connection with state departments of education provide extension work.

Agricultural education has entered the high schools within recent decades. The Smith Hughes Act of 1917 furnished national aid for vocational education on condition that the states contributed an equal sum. The high point in appropriations was to be reached in 1925-1926, the amount having gradually increased from about $1,600,000 to nearly $7,200,000, which was thereafter to be the annual sum. All of the states accepted the conditions of the law. About a third of the money was devoted to agricultural education, though in the farming states the proportion was higher. Through government aid many high schools thus offer courses in agriculture and have been provided with trained teachers. The federally aided agricultural schools increased from 609 in 1918 to 2,673 in 1923. In 1925 such schools used in teaching agriculture 4,226 teachers who served 93,125 pupils.

Coöperative Movement.—Another educational and economic factor has been the coöperative movement. This effort has long been practised in the ownership of farm machinery, in irrigation projects, and more recently in grain, fruit, milk, and other commodities. The citrus associations in California are excellent examples of co-

operation. The movement, in general, has been due to the low prices which the farmers have received for their products and the high prices which they have paid for their supplies. Selling as individuals they proved unable to cope with purchasers organized as associations. The first grain elevator company was formed at Rockwell, Iowa, in 1889, and by 1910 over 1,800, chiefly in the North Central States, had been organized. In 1919 sales amounting to $721,983,639 were made by farms and purchases to the amount of $84,615,669. Among the articles bought cooperatively were fertilizer, feed, binder twine, spraying materials, coal, crates, boxes, etc. In 1923, according to the department of agriculture, all farm organizations, ranking in the following order, did a business of over $2,000,000,000: grain, dairy, fruit and vegetable, live stock, tobacco, and cotton. Only 8,313 of the 10,300 organizations reported; nine-tenths were engaged primarily in selling farm products and the remainder in the collective purchasing of farm supplies. Secretary W. M. Jardine estimated the number of coöperatives as 12,000 in 1925 and the business transacted at $2,500,000,000.

Patrons of Husbandry.—Of the numerous attempts made at farmers' unions and the improvement of the farmers' economic well-being space will allow the barest reference to a few only. One of the best known of these organizations was the "Grange," or "Patrons of Husbandry," which dates back to about 1867. It was a secret organization, somewhat similar to the Masons and Odd Fellows; the membership fee was five dollars for men and two for women. The first granges were established in 1868, but little progress was made until 1872, when 1,105 were added; the next year 8,400 were formed and in the first two months of 1874 nearly 4,700. By the close of 1873 the Grange had entered all the states except four—Connecticut, Rhode Island, Delaware, and Nevada—and state granges numbered thirty-two. The rapid growth was due to the advocacy of government regulation of railroad rates and the establishment of coöperative enterprises. In Illinois, Minnesota, Iowa, and Wisconsin the Grange soon obtained railroad

legislation. The objects stated in Article 11 of the Kansas Farmers' Coöperative Association meeting at Topeka in 1873 are fairly typical and will be quoted here:

> The objects of this Association shall be the collection of statistics relative to the products of the State, their amount, cost, and value; to assist the farmers in securing just compensation for their labor; to co-operate with similar organizations in other States in procuring cheap transportation and remunerative prices for surplus products, and act generally in the interest of the producing class.[4]

The Grange reached its high water mark in 1874. The next year the tide began to recede and by the close of the decade only a fifth of the twenty thousand granges of 1874 were alive. One of the causes of failure was the lack of careful selection of members, some of whom fell away at the first difficulty, but possibly a more important cause was the hasty entrance into coöperative buying and selling. The National Grange bought patents for all kinds of agricultural implements without careful investigation of utility or the validity of patents. The Iowa harvester factory failed in 1875 and bankrupted the state organization; other failures followed; suits for patent infringements were brought against other factories; and local granges disbanded lest they might be held responsible for debts incurred.[5]

Other Organizations of the Nineteenth Century.—After the agricultural depression of 1877 farmers flocked to the support of the laborers in the greenback and silver agitation. Low prices in the eighties and nineties were a factor in agricultural discontent. As pointed out by Professor S. J. Buck 174 bushels of wheat would pay the interest on a two-thousand-dollar mortgage at eight per cent in 1888 but 320 bushels were required in 1894 or 1895. The Farmers' Alliance, starting in Texas, the Agricultural Wheel, beginning in Arkansas, the National Farmers' Alliance,

[4] Periam, Jonathan. *The Ground Swell* [Hannaford, Cincinnati, 1874] 276.

[5] In later years the Grange made a notable recovery. It is now active in about three-fourths of the states of the union.

starting in the Northwest, and the Colored Farmers' Alliance, beginning in Texas, were among the other efforts at agricultural organizations. Members of the various alliances contributed to the more than one million votes cast for the Populist candidates in 1892 and to the spectacular free silver campaign of William J. Bryan in 1896, but they suffered defeat in both struggles. Their next important effort came through another organization in the twentieth century.

Non-Partisan League.—The Non-Partisan League was begun in North Dakota in 1915 with the object of remedying unfair marketing methods. In the fall of the next year, the new party, chiefly agricultural, elected all of the state officers with the exception of the treasurer, 81 of the 113 assembly members, 18 out of 25 senators, and the three judges of the supreme court. During the next five years it controlled North Dakota and developed considerable strength in Minnesota, Idaho, Nebraska, and Colorado. The fundamental idea was control of marketing facilities by state action, but this soon developed into state control or ownership of natural resources, banks, and marketing facilities. Attacks by vested interests and poor leadership caused difficulty for the league. Moreover, its program failed; thus, the bank got into trouble, the state debt increased, and the flour mill failed to realize the hopes of its founders. In 1921 the Non-Partisan governor was recalled, but the people refused to give up their state-controlled bank and state-owned mills and elevators. Moreover, in the fall of 1922, they elected the recalled governor to Congress. But 1924 failed to reveal in the Non-Partisan territory the expected strength for the Farm-Labor coalition.

Farm Bureaus.—Another agency, which like the coöperative movement, the Grange, and the Non-Partisan League, has brought the farmers together and thus improved their education and widened their horizon, is the National Federation of Farm Bureaus which was organized November 12, 1919. It was built on state federations which in turn rested on county organizations. An intensive membership campaign was at once launched and late the next year a

membership of a million was claimed in thirty-seven states. The strength was naturally greatest in the farming states of the North Central District, such as Iowa and Illinois. In the former, however, as elsewhere, the opposition and distrust of farmers' unions often causes difficulties. Agricultural agents are widely used and about five thousand persons are employed in coöperation with state agricultural colleges. The Farm Bureau Federation has gone on record, among other things, in favor of an increase in the Federal farm loan limit, in opposition to organized strikes, in favor of the appointment of a sympathetic secretary of agriculture, in condemnation of the guarantee of a fixed return to public utilities, in favor of the simplification of income tax laws, of world-wide market news for farmers, of a protective tariff, and "truth-in-fabrics" legislation, and in condemnation of "short selling" on boards of trade. The most notable work, however, has been the promotion of coöperation already referred to.

Land Policy.—In colonial days land was generally acquired in one of three ways: buying shares of stock which allowed profits in the stock company and a specified amount of land; meritorious service, generally to ministers, physicians, or other public servants, but also to manual laborers; and by head right, which entitled the person who paid passage way for others a specified amount of land on the fulfilment of the prescribed conditions. Of course, the crude methods of surveying prior to the adoption of the rectangular system at the close of the eighteenth century prevented the giving of the exact number of acres called for, but since land was cheap that usually made little difference.

Agricultural development in the West was furthered by land prices which were low in comparison with those in the East. Virginia in 1779 allowed Kentucky pioneers to take four-hundred-acre tracts at the rate of two and a half cents an acre. About the same time North Carolina allowed settlers to take a section of land on their own account with one hundred acres additional for a wife and child at the rate of about ten cents an acre. Connecticut offered her

land in the Western Reserve at about forty cents an acre, and Massachusetts, anxious to check western migration, lowered the price of Maine lands to fifty cents an acre.

Seven states—Massachusetts, Connecticut, New York, Virginia, North Carolina, South Carolina, and Georgia—claimed western territory, chiefly on the ground of their colonial charters. New York based her claims in part upon a treaty with the Iroquois Indians in 1768 which had placed them under her protection. Virginia's claim to the Northwest Territory, overlapping the claims of Massachusetts and Connecticut, was strengthened by actual conquest during the course of the Revolutionary War. The states with land claims naturally hoped to settle their debts, lessen their taxation, and improve their economic conditions through the disposal of land on the open market. On the other hand, states whose boundaries had been fixed by the old charters, such as Maryland, New Jersey, and Pennsylvania, were considerably handicapped. They knew that if the other states maintained their land claims, some of their own citizens would leave them because of the pressure of heavy taxes with the result that the burden of the remainder would be increased. They believed, moreover, that the land was paid for by common blood and suffering and should be the heritage of all. They consequently insisted that the states surrender their claims to the national government.

Congress wisely refused to take part in the disputes over rival claims, pointed out the dangers, and advised the cession of all claims to the Confederation. Maryland, the principal opponent of the land-claiming states, refused until the land claims had been ceded, to accept the Articles of Confederation approved by Congress, November 17, 1777, and sent to the states for ratification. When, however, New York led the way in 1780, Maryland ratified, and the Articles became the law of the land, March 1, 1781. Virginia, whose claims were the most valid, surrendered her territory north of the Ohio in 1784. The next year, Massachusetts ceded her claims west of New York and a year later Connecticut did likewise, except for the "Western

Reserve" just south of Lake Erie which she held until 1800. South of the Ohio, land claims were surrendered more slowly, but South Carolina gave up hers in 1787, North Carolina in 1790, Virginia in 1792, and Georgia in 1802.

With the land coming into its possession, the government under the Articles of Confederation enacted its most important legislation. Forty years later, Daniel Webster declared: "I doubt whether one single law of any lawgiver, ancient or modern, has produced effects of more distinct, marked and lasting character than the Ordinance of 1787."[6] Although the ordinance, among other things, provided for three judges to govern the territory until the population was great enough to form a representative government, asserted complete political and religious liberty, favored a system of free public education, excluded slavery from the region, and stipulated that from three to five states should be made out of the territory, our interest just here relates to another point. The ordinance provided for allodial tenure, or the absolute ownership of the land free from the old feudal obligations of quit rents, services, etc. Primogeniture and restrictions on sales gave way to equal inheritance and free sales.

In the first years of our national life, Congress believed in selling the land in large amounts in order to obtain money to pay off the public debt. By law of 1785 the minimum purchase was 640 acres. This attitude persisted in part until 1820, but Congress, in May, 1800, passed a law permitting the sale of land in tracts as small as 320 acres for two dollars an acre, one-fourth down and the balance in three annual installments. In 1804 the minimum was reduced to 160 acres, the smallest tract sold until 1820. In that year forty-acre tracts were authorized and the price was reduced to $1.25 an acre cash, the insistence on the latter being due to the financial difficulties of 1819 which caused some land to revert to the national government. The intention after 1820 was to settle the country rather than to pay off the debt.

[6] *Works* [Little, Brown and Company, Boston, 1860] Vol. III, 263.

In 1841, the first general preëmption act was passed. Actual settlers were thus definitely given, without the necessity of a protective law renewed yearly, the first chance to obtain title to the land on which they had settled. The Homestead Acts of 1862 and 1864 allowed settlers to obtain title to 160 acres of land "without money and without price" on condition that they lived on the land five years. Soldiers and sailors were allowed later to subtract the term of their service up to three years. The Act of 1912 allowed the issue of a patent after three years. Numerous other acts, like the Timber Culture Act, the Desert Land Act, the Enlarged Homestead Act of 1909, permitting a 320-acre unit, and the Grazing Homestead Act of 1916, allowing 640 acres, have tended to popularize land holding. The amount of unappropriated land is still over 180,000,000 acres, more than a fourth of which is in Nevada and most of the remainder in the West, though it is found in twenty states.

Reclamation.—Even though most of the unappropriated land is lacking in rainfall, the strides taken by dry farming and irrigation, indicate that it may be valuable at some time. By dry farming the moisture of two years is conserved to raise crops for one year. The Mormons in Utah, after heart-breaking failure, succeeded at last in irrigating small farms. Indians, Mexicans, and California missionaries probably irrigated a few hundred acres at that time, and in 1870 the Union Colony at Greeley, Colorado, began irrigation. From less than 20,000 acres of irrigated land in 1870, and 1,000,000 in 1880 the acreage advanced to nearly 20,000,000 in 1920, and in the last census year the crops raised on irrigated land were worth over $800,000,000. Another factor tending to increase the amount of available land is drainage; the first census on the subject, 1920, showed that over 53,000,000 acres, or 10.5 per cent of all improved land in the country, had been drained. According to Oliver E. Baker of the Bureau of Agricultural Economics there is three times as much potentially drainable as irrigable land in the United States.

Size of Farms.—Colonial farms varied in size from a few

acres in New England to thousands of acres in New York, and the southern colonies. In New England arable land was limited, climate and soil unsuitable, farm labor scarce, commerce and fishing more profitable than agriculture, Indian attacks dangerous, and social and religious ties stronger, and so the farms were small. In New York under the Dutch patroon system estates of fifty or a hundred thousand acres were granted chiefly through head right, and in Virginia and the Carolinas large estates were built up in a similar way. The nature of the soil, climate, and crops, moreover, favored the building of large estates. In Pennsylvania, New Jersey, and the Middle Colonies generally farms were larger than in New England but smaller than in the South. Until the Civil War there were large farms in the South, but division of the big plantations occurred then. Now the largest farms are found in the West.

The following table shows some of the main points relative to agriculture since 1850:

Year	Number of Farms	Value of Farms and Farm Property	Size of Farms, Acres	Percentage Improved
1850	1,449,073	$3,967,343,583	202.6	38.5
1860	2,044,077	7,980,493,063	199.2	40.1
1870	2,659,985	8,944,857,749	153.3	46.3
1880	4,008,907	12,180,501,538	133.7	53.1
1890	4,564,641	16,082,267,689	136.5	57.4
1900	5,737,372	20,439,901,164	146.2	49.4
1910	6,361,502	40,991,449,090	138.1	54.4
1920	6,448,343	77,924,100,338	148.2	52.6

With the exception of the decades, 1880-1900, and 1910-1920, the farms have been becoming smaller. For the early part of the period the homestead acts and expansion of wheat culture were largely responsible for the increase in size; for the latter part homestead acts, rising prices of land, and the city-ward movement. There were, for instance, nearly two million less people engaged in agriculture in 1920 than in 1910, or 10,661,410 as compared with

12,384,517. The average value of farm land and improvements varied little from 1860 to 1900; it was $16.92 in 1860 and $20.70 in 1900, but in each of the following decades it practically doubled. The average value of the land and buildings advanced from $39.60 an acre in 1910 to $69.38 in 1920.

The older states naturally declined in farms because of the increasing importance of manufactures and commerce. From 1900 to 1910 thirteen states and in the next decade twenty-four states lost in farms. The western and southern states were generally exempt, but practically all of the others suffered; for the decade, 1910-1920, the chief losers were: New York (22,402 farms), Pennsylvania, Ohio, Illinois, Missouri, Kansas, Maine, Michigan, and Indiana (10,359). The only midwestern states of any importance to show gains were Minnesota and Wisconsin. And the decline has continued, farms, according to preliminary figures, falling to 6,372,263 in 1925, a decrease of about 1.2 per cent, largely because of the ravages of the boll weevil, migration of negroes, dry seasons in the Northwest, consolidation of farms, and general recession from war-time expansion. The loss was widely distributed, twenty-three states sharing in it, but Georgia alone seems to have lost 61,631 farms.

Tenancy.—With the increase in the value of lands naturally went an increase in tenancy. When good land could be obtained at low prices, few people would rent, but when land became more valuable renters increased, for no longer would the savings of a year or a few years buy a good farm. Not until 1880 were statistics collected on farm ownership.

Although renters have increased from a fourth of the total to nearly two-fifths in forty years, there is little real cause for alarm, for the rate of increase is declining. Moreover, a careful government study in 1900 showed that few landlords owned more than one farm, that the typical landlord resided near his farm, that few lived in foreign countries, and that many landlords were related to the tenants. Age statistics indicate that many farmers begin as laborers, then lease land, and eventually become owners. Viewed in

this light tenancy for many farmers is a transitory stage to ownership. In 1920 five states had less than ten per cent of their farms operated by tenants: Maine (4.2), New Hampshire, Massachusetts, Connecticut, and Nevada (9.4). In general in 1900, 1910, and 1920 from seventy-five to ninety per cent of the farms in the remainder of the New England States, the northern tier of Central States, and the Western States were operated by owners. From fifty to seventy-five per cent of the farms in the remaining Central States and the Middle Atlantic Coast States, with Florida, were operated by owners; in the remainder, consisting of most of the Southern States, less than half of the farms were operated by owners.

Farm Debt.—Farm debt seems to be growing, for in 1900, 31.1 per cent of the farms were mortgaged; in 1910, 33.2, and in 1920, 37.2. In the last decade this debt advanced from less than $1,750,000,000 to more than $4,000,000,000, or while the average value per farm increased from about $6,444 to $12,084, the average debt advanced from $1,715 to $3,356. When, however, we compare the ratio of debt to value we note that the percentage advanced less than two per cent. In 1920 the ratio of debt to the value percentage was over a third in eleven rather widely scattered states: Delaware (39.0), Vermont, Wisconsin, New York, New Jersey, Maryland, Nevada, Alabama, Michigan, Pennsylvania, and New Hampshire (33.6). In spite of this increase probably no other industry has so small a percentage of mortgage or bonded debt as agriculture, and in spite of the recent depression, agriculture is and will long remain the backbone of national prosperity.

Federal Farm Loan System.—The government has aided agriculture from time to time in connection with education, irrigation, and in other ways, some of which have already been mentioned. Additional assistance has been offered through the Federal Farm Loan System, the War Finance Corporation, and the Federal Reserve banks.

The first, provided for in 1916, is intended to allow the farmers to secure loans for long periods of time at low rates of interest. The system is under the control of the Farm

Loan Board of five members. The country was divided into twelve districts and a land bank with a capital of $750,000 was established in each district. Each bank was managed by a board of nine directors, three appointed by the Farm Loan Board as representatives of the public and six elected by farm loan associations. The latter were formed presumably of farmers who wished to borrow money and consisted of ten or more owners or people about to become owners of farm land acceptable as security. The shares had a par value of five dollars. Borrowers made application for membership and subscribed five dollars for each hundred dollars which they wished to obtain. One individual could not borrow more than ten thousand dollars nor less than a hundred and the loans could not exceed one-half the value of the land and one-fifth the value of the permanent improvements on it. Money could be borrowed to buy land for farming, equipment, fertilizers, live stock for farm operation, buildings, and to pay off the indebtedness on the land at the time the loan was contracted. The Federal Farm Loan banks obtained their funds chiefly by the sale of bonds secured by farm mortgages which had been turned over to them by the farm associations in return for cash.

Agricultural Credit Act of 1923.—The Agricultural Credit Act of 1923 created twelve Federal Intermediate Credit Banks "as adjuncts to the existing Federal Farm Land Banks." The new banks, however, are independent in capital, assets, and liabilities, and make their loans on paper which rests "on personal or corporate credit, supported by endorsements, warehouse receipts, chattel, mortgages, etc." The capital of five million dollars each is subscribed by the national government. The banks carry on business not with individual borrowers, but with specified banks and credit or marketing associations when the obligations purchased were used in the first place for agricultural or live stock purposes. The banks may buy or sell debentures issued by each other and make loans to cooperative associations for agricultural and live stock purposes provided the loan or advance is not above three-

fourths of the security offered. Loans, advances, and discounts run from six months to three years and are negotiable. The Federal Farm Loan Board controls the discount rate and may require any Federal Intermediate Credit Bank to rediscount the discounted paper of any similar bank. Bonds may be issued for five years at a rate determined by the board, but not in excess of six per cent. Half of the net earnings goes to the United States treasury and half to the bank surplus.

National Agricultural Credit associations, supervised by the comptroller of the currency, are provided for; their business is much the same as that of the Intermediate Credit banks except that their paper may not run for more than nine months from purchase, unless on live stock, when it may be for three years. Interest rates may not be higher than the legal rates where the associations are formed. The government does not provide cash for the associations and their number is unlimited. The capital, however, cannot be less than $250,000 and one-half of this amount must be paid in cash. If the capital is less than a million dollars, business may be done with the public, but otherwise not, and the associations then become institutions of rediscount. Member banks of the Federal Reserve System can invest up to ten per cent of their capital and surplus in National Agricultural Credit associations and the shares and dividends of the latter may not be taxed more by the states than national banks or "other money capital in the hands of individual citizens."

War Finance Corporation.—The War Finance Corporation, authorized in March, 1919, suspended in May, 1920, but renewed in January, 1921, June, 1922, and again in 1923 and 1924, has aided farmers in the export trade. At its creation the corporation agreed to finance a million bales of cotton which involved $60,000,000, and it has since financed wheat, fruits, vegetables, tobacco, dairy, meat products, etc., for various coöperative associations, actually advancing about $300,000,000. Possibly more important than the actual financing of farm products has been its inspiration of confidence in other agencies, for, as the

secretary of the treasury said in 1921: "Its experience has been that wherever it loaned, or agreed to loan, a dollar, it produced confidence to such an extent that others were willing to advance many dollars." The process of liquidation began January 1, 1925.

Commercial Banks.—Although the Federal Farm Loan banks advanced money to the farmers at low rates of in-

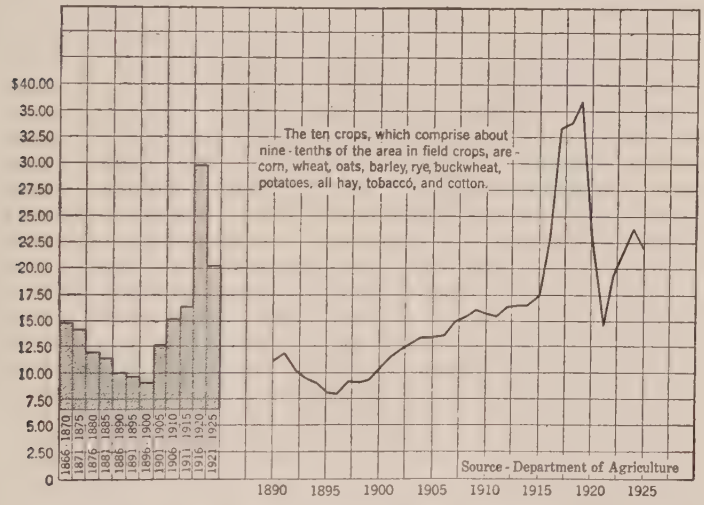


CHART NO. 15. YEARLY VALUE PER ACRE OF TEN LEADING CROPS COMBINED.

terest and for long periods of time and the War Finance Corporation in times of emergency, the commercial banks have supplied far more money. On December 31, 1920, the estimated personal and collateral loans outstanding to farmers was $3,869,891,415, or 13.29 per cent of the banks' total loans and discounts, and if the farm mortgages of the same date be added the total was about $5,317,400,000, or 18.3 per cent of all bank loans and discounts. A combination of the two indicates that bank accommodations to farmers comprised from four-fifths to two-thirds of the total in South Dakota, North Dakota, Kansas, and Iowa.

The average rate of interest at the peak, March, 1921, was 7.96 per cent; the lowest rate was in the Middle Atlantic States at 6.01 and the highest in the West South Central at 9.66. For states the lowest rate was in New Hampshire at 5.98 and the highest in New Mexico at 10.17.

General Advance of Farmers.—Although it is undeniably true that in recent years many farmers have lost money, and the price of farm products has fallen more

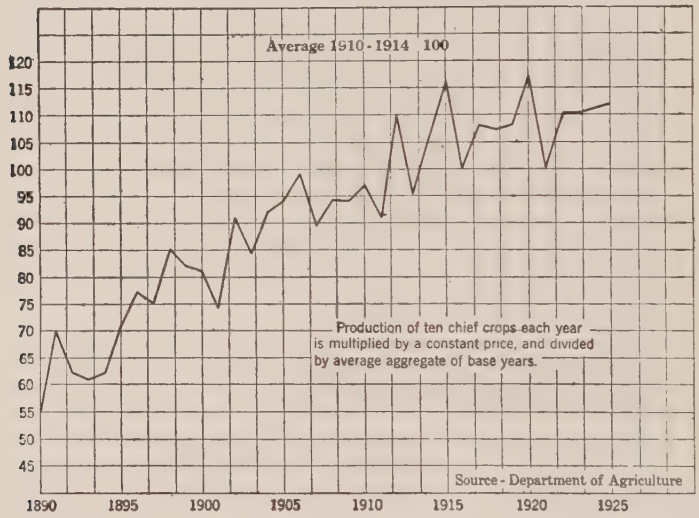


Chart No. 16. Index Numbers of the Mass of Crop Production.

proportionately than that of the commodities which the farmer must buy; and although it is likewise true that rural population in many states is declining, we must not overlook the fact that physical conditions of living on the farms are growing better. Houses are far more comfortable and more attractive than in former years. Now more than 2,500,000 farm homes, or nearly two-fifths, have telephones, nearly 650,000 their own water and sewerage systems, and about 450,000 their own gas and electricity. In 1920 there were about 2,000,000 cars on the farms, and 140,000 motor trucks and 250,000 tractors were used.

Automobiles, hard roads, consolidated schools and churches, telephones, radios, rural deliveries, newspapers and magazines, circulating libraries, and labor-saving machinery are all working to make farm life more attractive and pleasant. Rising prices in 1923 and 1924 increased the farmer's purchasing power and this increased ability was reflected in the sales of automobile factories and mail order houses. In each year, 1923-1925, farm crops were worth over ten billion dollars. (See chart on page 131.)

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CHAPTER VI

ANIMAL LIFE ON THE FARM

General Importations.—The importation of live stock began very early in this country. When Columbus made his second voyage in 1493 he brought not only vegetables, grains, and fruits, but also horses for cavalry purposes, breeding mares, sheep, goats, pigs, and cattle. From the West Indies, where the first stocking began, cattle were carried over to the mainland, and immigrants brought with them live stock as a matter of course when definite settlement began.

The first cows were taken to Jamestown in 1609, if not earlier. By 1611 the number was a hundred, by 1620 five hundred, and by 1639 fifty thousand. Rapid development was encouraged in this period by cruel laws which forbade the killing of domestic animals under death penalty for the principal, burning of hand and cropping of ears for accessory, and sound thrashing for concealer of facts relative to the crime. These laws were, of course, soon repealed.

Four years after the landing of the Pilgrims, Governor Winslow imported three heifers and a bull, which were held in common for three years, or until 1627. The animals were then to remain in the hands of the individuals who received them for ten years, at the expiration of which time the possessors were to have the produce, and the old stock was to be held by the colony in common. Growing importations are indicated by the fact that twelve cows were taken to Cape Ann in 1626, thirty in 1629, and about a hundred in 1630. Early in the history of New York the Dutch West India Company introduced 103 horses and cattle, and furnished each tenant with four cows, four

horses, and some sheep and pigs for a term of six years. At the expiration of that time the number of animals received was to be returned, but the increase was left in the hands of the farmers. The company cattle were then divided among the farmers unable to purchase them. The Swedish West India Company early introduced cattle into Delaware, and John Mason, 1631-1633, introduced the Danish cattle into New Hampshire, where they mixed with other stock and spread over the country. Cattle had apparently been taken to Newfoundland and Nova Scotia by the Portuguese in the fisheries as early as 1553, and French cattle were imported early in the next century. Cattle were probably first taken to the Carolinas about 1670. By the close of the seventeenth century all of the colonies had them, and by the time of the Revolutionary War the cattle industry, dairying and meat, was of more than local importance.

Improved Stock.—After the Revolutionary War modern improved stock continued to be imported. In 1783 three Baltimore citizens obtained some fine cattle from England and in 1785 and later some of these animals were sent to Kentucky. A half-breed bull sent to Kentucky about 1804 "is said to have greatly improved the stock of that state." Some of these early cattle were called the beef breed, probably longhorns, and the others, known as the "milk breed," were probably shorthorns. Some of the latter were imported into Westchester County, New York, as early as 1792 and 1796. For a while they were kept pure, but they finally became scattered and left their descendants all over that section. About 1817 Henry Clay imported some Herefords, and seven years later Powell of Philadelphia began the importation of shorthorns. He also attained considerable success in breeding, and at his frequent sales some shorthorns were sold to the cattle men of Ohio, Kentucky, and other states. In 1834 the Ohio Company for importing English cattle was formed and agents were sent to England to secure the best breeds. Nineteen head were sent in the first shipment, and after 1840 importations increased rapidly. At times as much as five thousand dollars was

paid for individual shorthorns, but after 1850 those of this country were fully as good as those of England. Not until 1840 did the importation of Herefords really begin; in that year five bulls and seventeen cows and heifers were taken to Albany, New York. Other importations followed, but not until the development of cattle ranching did they become very important.

Cattle Ranching.—Cattle ranching has long been associated with frontier life, as in Virginia, the Carolinas, and elsewhere. Beginning about 1805 western cattle were driven eastward over the Appalachian passes. The Spanish cattle imported into Mexico by Cortez and his followers had multiplied rapidly on the plains of Mexico, which then included Texas, but their masters found a market only for hides and tallow which stood transportation well. When the United States acquired control, American cattlemen attempted to market Texas beef and as early as 1857 some cattle were driven north to the Illinois corn fields, but the war stopped this outlet. The Texan ranges were thus almost swarming in the late sixties. By accident, apparently, in 1864-1865 a teamster discovered the nutritive value of northern grasses. Overtaken by the winter snows on the Laramie plains he turned his oxen loose to shift for themselves, but in the spring, to his surprise, he found them in better condition than ever; they had fed on the cured buffalo grass laid bare by the wind. Northern grass was better than southern, for a four-year-old steer would gain some two hundred pounds more there than on southern grass; moreover, the beef was considered of better quality, the range was more abundant, and after 1876 the Indians were more carefully watched.

Because cows seemed to be more prolific in the warm southern climate, the ranches of the South supplied the immature cattle and those of the North matured them. The line of march shifted with the westward movement, the cattle trail following the fringe of settlement. Wherever it crossed an important railroad, a shipping point developed. From 1870 to 1872 Newton, Kansas, on the Atchison, Topeka, and Sante Fé, and Abilene on the

Kansas Pacific; later Great Bend on the former and Ellsworth on the latter; and still later Dodge City on the Atchison and Hayes City on the Kansas Pacific were important shipping points. In 1885 Ogalala, Nebraska, on the Union Pacific, took rank with Dodge City; to these two cities about 400,000 cattle were driven in 1884. The high point, however, had been set in 1871 when about 600,000 cattle were driven north from Texas. According to Joseph Nimmo, the number, 1866 to 1884, was over 5,250,000. The decline came with the development of the railroads, which could handle the cattle more rapidly and almost as economically. In more recent years the movement has been eastward to the corn belt and such packing-centers as Kansas City, St. Joseph, Omaha, Chicago, and St. Louis have developed. Pork, in a way, seemed to be a sort of by-product of beef because in this region hogs were allowed to fatten on the droppings of corn-fed cattle.

Dairying.—In early colonial days dairying was of slight importance, though by the middle of the eighteenth century it was of considerable magnitude in certain localities. For instance, the large farmers of Rhode Island sometimes kept as many as a hundred cows. In one case a sale of thirteen thousand pounds of cheese from one farm is recorded, and in still another case seventy-three cows produced ten thousand pounds of butter in five months, or approximately a pound of butter for each cow each day. Again, the Carolinas and other colonies exported some dairy products as well as salted and pickled meats. Developing cities, such as New York, Philadelphia, and Boston, also supplied a local market. So, too, the opening of the Erie and other canals encouraged the development of dairying. Railroads also aided and the importation of Jerseys, Guernseys, Holsteins, and Ayrshires increased. Condensing of milk began about 1800 and milk-powder manufacture about 1810, but neither was important until much later. Cheese making under the factory system developed rapidly in the sixties and seventies, and butter making a little later, aided largely by the Babcock test for determining the percentage of butter fat in milk and by the centrifugal separator, which

separates the cream without setting the milk and waiting for the cream to rise. The bread-eating habits of the Americans have led also to specialization on butter making, and the development of the silo has made it possible to feed succulent food to dairy cattle in winter. This latter factor has been largely responsible for the shift in dairying to the West, New York and Pennsylvania since 1900 giving way to the territory northwest of Chicago.

In 1919 the important milk-producing states were Wis-

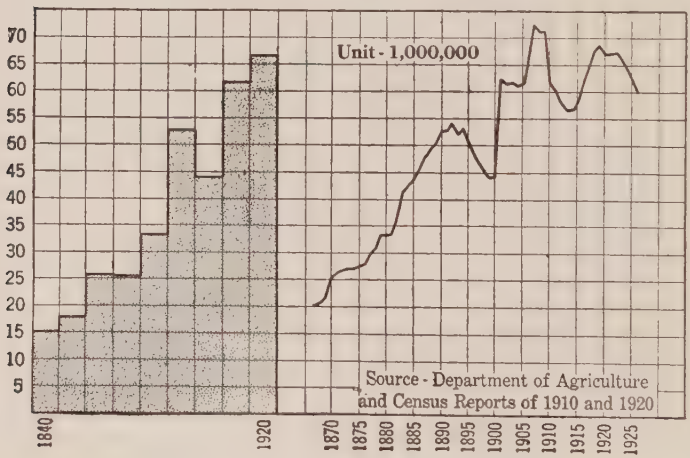

CHART NO. 17. NUMBER OF CATTLE.

consin, New York, Minnesota, and Pennsylvania. The farm states leading in the production of butter were Texas, Pennsylvania, Tennessee, and Kentucky, but only about two-fifths of the total product was made on the farms. Butter, like cheese, only two per cent of which is now made on the farm, bids fair to be transferred to the factory. The 1926 leaders in cattle were Texas, Iowa, Nebraska, Kansas, and Wisconsin.

Horses.—Although Columbus brought the first horses to the new world in 1493, the first landed in the United States were probably taken to Florida by Cabeza de Vaca in 1527. Perhaps the wild horses found on the plains of

Texas were descendants of the fine Spanish horses abandoned by De Soto. In 1604 a French lawyer took horses to Acadia and the small ponies of that region still show a trace of Norman lineage. Two years after the settlement of Jamestown six mares and a horse were brought in and in 1657 the exportation of horses was forbidden. About 1625 the Dutch West India Company sent horses to New York and four or five years later Higginson imported them into Massachusetts Bay. The French, who settled in Illinois in 1682 and following, imported the Canadian horses. By the time of the Revolutionary War they were found in considerable numbers in all of the colonies.

Horses began to improve toward the close of the seventeenth century, for better care was given and attention was turned toward breeding. About 1788 Messenger, the famous sire of American trotting horses, was imported, and the next year, according to Professor T. N. Carver, the famous Morgan horses began. The interest in the South until the middle of the nineteenth century was largely in race horses and even to-day the name of Zev, Man of War, Bubbling Over, or any other famous racer stirs the feelings of more people than the names of a thousand roadsters or draft horses. In the North, racing was not so common in the early period, though Yankey, in 1816, created a sensation by trotting under the saddle a mile in 2:59 in the New York Harlem race course. Up until 1840 or thereabouts travelling was done on horseback, for the buggy was almost unknown during the early period.

Another breed of horses, the Black Hawk, equally famous with the Morgan, developed in the period shortly prior to the Civil War. The founder of the race, known as Black Hawk, was famous for transmitting his characteristics, including great speed as a trotter, to his offspring. Both the Black Hawk and Justin Morgan breeds were celebrated roadsters. Another breed of horses, famous in the North, the Conestoga, was noted for its size and strength and was much used in cities for drays and by prosperous immigrants going west with heavy wagons. Perhaps the most important event of the period of thirty-five or forty years,

prior to the Civil War, in horse breeding, at least, was the importation into Ohio of the Percheron stallion, Louis Napoleon, for it led to a marked improvement of the draft

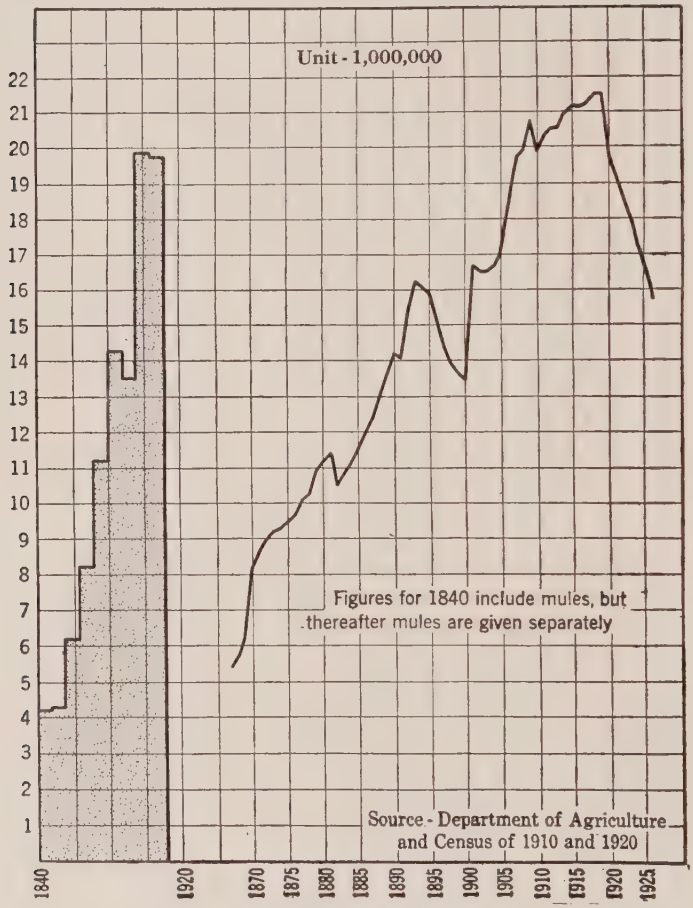

CHART NO. 18. NUMBER OF HORSES.

horse, and for the country as a whole the draft horse, though less spectacular than the trotting horse, is the more important. About 1839 the thoroughbred stallion Denmark was taken to Kentucky, where he became the founder

of a famous line of saddle horses. Of course, numerous other importations and more careful breeding followed in the later period.

During the colonial period horses were so numerous, according to the author of *American Husbandry,* that few people, save the negroes, walked. In 1840, however, there was about one horse to every four people, or probably less than four million for the whole country. The growth since 1840 is indicated on the accompanying graph. Since the high mark was set in 1918 at 21,555,000 the tendency has been downward, and by 1926 the decrease had amounted to about six millions. The advent of the automobile has been largely responsible for the big decrease. Some authorities think that the horse will be extinct within a few centuries. And true it is that the draft animal is being driven off many farms by tractors. However, other horse-lovers contend that this fine animal will always have its uses, irrespective of the machine age. While draft horses and roadsters may suffer, the thoroughbreds for the saddle will always be cultivated. Iowa, Illinois, and Kansas are the usual leaders in total number of horses.

A paragraph may be in place concerning the European horses which escaped from Spanish settlements in Mexico or from exploring parties and for three centuries ran wild on the western plains. Like the buffalo, they seemed doomed to extinction in the last quarter of the nineteenth century, but some bands in New Mexico, Colorado, and elsewhere managed to survive and the number seems to be increasing again. As the plains were settled they ran on the range, being caught at intervals, branded, and sold. Like wild cattle many have disappeared through admixture with other breeds. The government advocates the extinction of the wild horses in common with other predatory animals. Says the 1923 report:

> . . . The destruction of large numbers of wild and practically worthless horses, which on some areas number thousands, would also increase the capacity of the range in many districts. Their presence not only decreases the number of valuable live-stock, but they are an actual source of injury to the range. In many

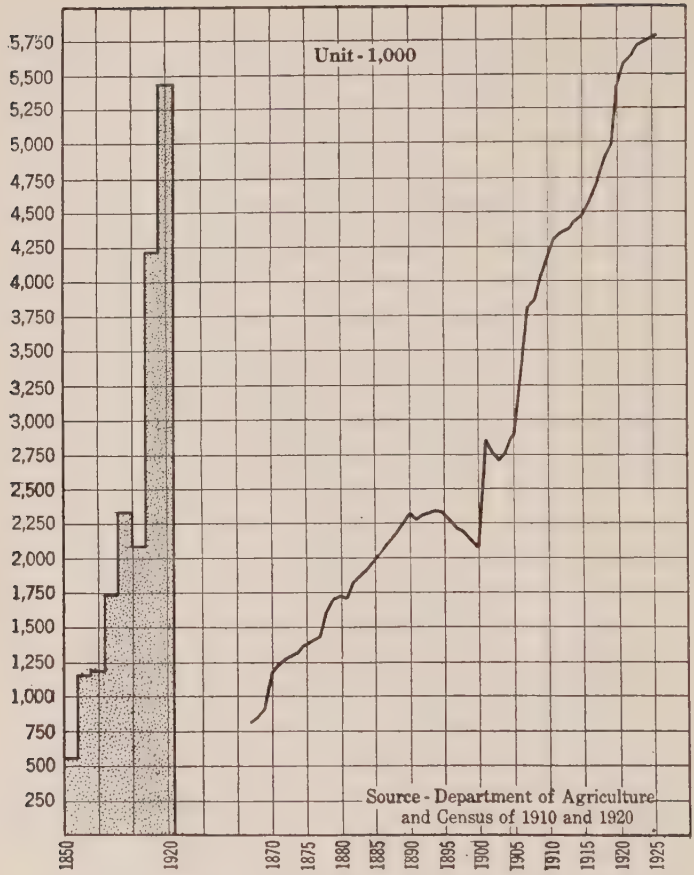

CHART NO. 19. NUMBER OF MULES.

instances they are so wild and the country is so rough that it is impossible to round them up or remove them. Even if rounded up they have no commercial value, except for fertilizer or for poultry feed.[1]

Mules.—The mule is a sterile animal, having a donkey for a father and a horse for a mother. This animal has

[1] *Agricultural Year Book*, 1923 [Government Printing Office, Washington, 1924] 400.

been imported into America since the close of the eighteenth century. George Washington was a pioneer in raising this stock, as he received two valuable jacks from Lafayette and the King of Spain. Mules increased very slowly, however, and as late as 1850 the number amounted to only a little more than 500,000 animals. It had reached 4,000,000 by 1909, and nearly 6,000,000 by 1926. The ability of the mule to withstand hardships and a damper climate than the horse is indicated by the fact that of 6,000,000 draft animals in the nine cotton-belt states, over half are mules, whereas in Iowa, Illinois, and Indiana, only a tenth of 3,500,000 are mules. In Kentucky and parts of Tennessee, where the mothers are "culls of the driving horse breed," the finest mules are raised. Missouri, according to Professor J. Russell Smith, is the greatest mule-producing region, and at St. Louis, under a single roof, five thousand mules are sometimes found for sale. (See chart on page 142.)

Oxen.—Oxen have been used for many years in this country, their most general use being to haul logs, for deep in the mud of a swamp the ox will pull when a horse will not try. On the rocky soils of New England the ox is useful and so is more common there than in any other part of the country. But the number of oxen has never been very large. In 1890 it was about a half million and in 1920 probably less, for the ox as a work animal seems to be declining in importance. In recent census reports statistics are usually given as oxen and other cattle.

Sheep.—In all probability the first sheep imported into the colonies were carried to Virginia in 1609 and within forty years the number was about three thousand. The Dutch West India Company in 1625 and again in 1630 sent sheep to New York, but dogs and wolves created considerable havoc. Sheep were also carried to New England early in the history of the settlements and by 1633 they were kept on the settlements in Boston Harbor; by 1635 New Hampshire had ninety-two sheep, and by 1642, Charleston, Massachusetts, had about four hundred. Eighteen years later sheep were introduced on Nantucket Island and the production of wool became important. Flint says:

. . . There were few extensive flocks, but in the days of homespun it was very common for the farmer to keep a number sufficient for home consumption. In fact, it was almost a matter of necessity. But the old native sheep was a coarse, long-legged, and unprofitable animal. The first fine-woolled sheep introduced into the country were those brought from Spain by Mr. Wm. Foster, of Boston, in 1793.[2]

According to Professor T. N. Carver the first merino sheep in the country were imported in 1773, but the industry did not begin to flourish until the Peninsular War in Spain and the Napoleonic restrictions and the American embargo, 1807-1809. The war created such conditions in Spain that the herds of merinos which had been guarded as a sort of national monopoly were broken up and offered for sale, and by 1809 about five thousand were owned in this country. William Jarvis, the American consul at Lisbon, shipped 3,850 from Lisbon in 1809-1810. Robert R. Livingston and General David Humphrey, ministers to France and Spain respectively, also aided in the merino fever which helped cause the price of wool to advance from one dollar a pound in 1807 to four dollars in 1814. Individual merinos sold for from five hundred to fifteen hundred dollars, and Professor Malcolm Keir speaks of a ten-thousand-dollar ram whose death attracted as many obituary press notices as that of a member of a royal family. The merinos were scattered all over the country, but Vermont and the Berkshire section of Massachusetts took precedence in breeding.

Importations continued after the War of 1812, but the increase in number was less rapid than that of the population, and in some sections, especially the East, a decline occurred because of the depredation of dogs which might destroy a year's earnings in one night, and because of the competition of the West now operative through improved transportation facilities. Speaking rather too emphatically of this Flint declared: "When, therefore, the competition of the great west was let in upon us, with the facilities for

[2] *Eighty Years' Progress* [Stebbins, Hartford, 1868] Vol. I, 59.

transporting wool, we had little left but a parcel of carcasses worth about as much as so many cats.''[3] There was, nevertheless, a slow, but steady growth in the average weight of a fleece, which increased from 1.84 pounds in 1840 to 2.43 in 1850. The fleece produced in Tennessee won the highest premium at the London World's Fair in 1851 over strong competition from Germany, Spain, Saxony, and Silesia.

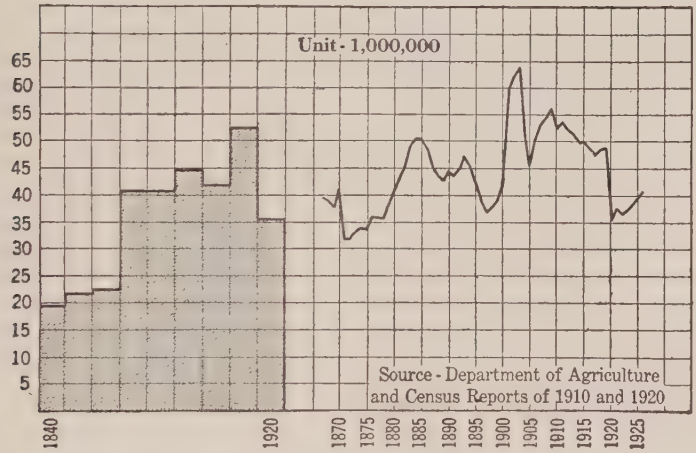

CHART NO. 20. NUMBER OF SHEEP.

In 1840 the number of sheep in the country was still less than twenty millions and not until 1880 was that number doubled. Since the high point of nearly sixty-four million in 1903, the tendency with considerable fluctuations, as indicated in the graph, has been downward. The six leaders in 1926 were: Texas, Wyoming, Montana, California, New Mexico, and Colorado.

Goats.—Of somewhat similar import, though of very little commercial importance, were goats, animals noted for their ability to live in an unhospitable environment. In 1920 they numbered about 3,500,000. Texas was the unquestioned leader with about half of the total, chiefly on

[3] *Ibid.*, Vol. I, 60.

the Edwards Plateau, but New Mexico was also important. The production of mohair in 1919 was about 6,800,000 pounds in comparison with about 3,750,000 in 1909. About five-sixths of the 1919 clip came from the state of Texas alone.

Hogs.—Perhaps the first hogs landed in what is now the United States were carried to Florida by De Soto in 1538; they were probably descendants of those taken to the West Indies by Columbus in 1493. In 1553, or earlier, the Portuguese carried swine to Nova Scotia and two years after the founding of Jamestown, the London Company sent them to Virginia, where they thrived so well, as in most other colonies, that by 1627 Virginia was in danger of being overrun by them, and the Indians fed on pork. In 1625 Governor Winslow introduced hogs at Plymouth and a year later the Dutch West India Company sent them to New York. By the close of the period salted and pickled pork, as well as beef, was a common colonial export, for hogs were found everywhere.

In the period 1776-1815, three breeds of importance developed in this country—the Woburn, Byfield, and the "merino hog." The Duke of Bedford sent two pigs from Woburn Abbey to General Washington, but the Englishman entrusted with their delivery sold them to someone else. These hogs, generally known as the Woburn or Bedford breed, originated in the cross of the Chinese and the large English hog; they are generally white, sometimes spotted, have small bones, deep round barrel, short legs, a fine quality of flesh, and weigh at a year and a half from four to seven hundred pounds. Gorham Parsons, of Byfield, Massachusetts, originated the Byfield breed, likewise by the crossing of the Chinese and the common hog. About the same time as the "merino craze," grass-fed hogs, sneeringly referred to as merino hogs, appeared. They were well-formed, "with," says Flint, "small heads, round bodies, compact and well-made, legs short and small boned, spotted in color, with a kind of dusky white on a black ground." Previous to the introduction of these breeds, according to Flint, swine "in the eastern and middle states

were coarse, long-legged, large-boned, slab-sided, and flab-eared, an unprofitable and an unsightly beast, better calculated for subsoiling than for filling a pork barrel.''

In the West the hogs were as bad, if not worse, but the Ohio Valley forests were rich in oak and beech mast, and hogs spread and flourished even more to the west of the mountains than to the east. Every frontier settlement had abundant food at a low price and the connection with corn production early became apparent. Ohio, Indiana, Kentucky, and Tennessee were soon the important hog-producing states, and Cincinnati came to the front as a pork-packing center, a position which she retained until displaced by Chicago in 1861. The early hogs were swift of foot, and strong in head, neck, and tusks, characteristics necessary to fight the wild beasts and to stand exposure, but the farmer wanted sluggishness in place of speed, fine small-boned animals rather than coarse, rawny-boned animals, a fine head, thin coat and ready fattening qualities rather than a thick hard coat, and so he turned to the Suffolks, which crossed well with the native stock, and to other breeds such as the Byfield, Chester County, Berkshire, China, Irish Grazier, and Essex.

The first meat packer was probably John Pynchon, of Springfield, Massachusetts, who bought and packed large numbers of hogs between 1662 and 1683. Early markets were Boston, New York, Philadelphia, and Baltimore. Later, hogs, live or dressed, were shipped down the rivers to New Orleans, and large droves, sometimes containing four or five thousand, were driven east. In the early part of the nineteenth century 100,000 a year were driven east and many to the south. Contrary to the general impression, however, the South, 1840-1860, had more hogs in proportion to the population than did the North. From about 1818 to 1861 Cincinnati was the greatest hog market in the country and perhaps in the world. In 1861-1862 Chicago packed over 500,000 hogs, for the first time surpassing Cincinnati. The use of refrigeration after 1868 revolutionized the industry, for it allowed the farmer to slaughter his animals and send them east. As population moved west-

ward, other markets—St. Louis, Kansas City, Omaha, South St. Joseph, and Sioux City—developed. To-day, of course, the greatest hog region is in the corn belt, with Iowa, Illinois, Nebraska, Missouri, and Minnesota, all corn states,

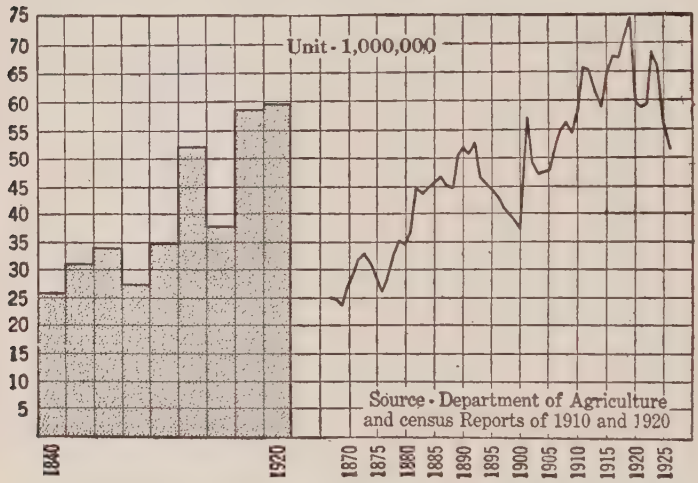

CHART NO. 21. NUMBER OF SWINE.

the 1926 leaders. The importance of hogs in American agriculture is intimated in the following quotation:

> Hogs are the most important sources of meat for human consumption. They are important in American agriculture because (1) They are produced by a large number of farmers; (2) they are consumed by large numbers of urban and rural people; (3) in the form of pork and lard they become two of the most important commodities in foreign and domestic commerce. Hogs rank second in number and third in total value of farm animals in the United States, being exceeded in number by cattle and in value by cattle and horses.[4]

The Poultry Business.—With the exception of the turkey all species of fowls common on American farms are of

[4] See *Agricultural Year Book* [Government Printing Office, Washington, 1923] 1922, 181-184.

either European or Asiatic origin. By all odds the most numerous and important is the ordinary domestic fowl, commonly referred to as "chicken." It is of Asiatic origin and was early domesticated. It was brought into the United States by the early colonists, but only after the Civil War did the industry become of commercial importance. Chickens are usually divided more or less arbitrarily into four breeds: the egg, meat, general utility, and fancy. The first are small or medium-sized, usually poor setters, easily frightened, and nervous; the Leghorns, Spanish, Minorcas, and Hamburgs are examples. Meat breeds include Brahma, Cochin, Langshan, and other breeds which are heavy-bodied, usually poor layers, but of gentle disposition, and good setters. The general utility fowls of medium size, such as the Plymouth Rock and Wyandotte, most popular of all breeds, produce a fair amount of eggs and meat. The Barred Plymouth Rock, "the best known," dating prior to 1875, is supposed to have come from a cross of the American Dominique and the Black Java. Plymouth Rocks are excellent broilers at eight to twelve weeks and are "good layers the year round." The Wyandotte, which "ranks next to the Plymouth Rock as a general-purpose fowl," weighs about a pound less and has five standard varieties, Silver, Golden, White, Buff, and Black. Fancy breeds are produced chiefly on account of their appearance and are generally poor egg and meat producers; the Polish, games, and bantams are the leading representatives of the class.

Turkeys, ducks, and geese are the most common of the other fowls, but partly because they are poor layers constitute only three per cent of the total. The turkey is an American bird, now rapidly approaching extinction, but once very common along the Atlantic coast. The wild turkey is hardier, healthier, quicker, and more alert than the domestic turkey, and a cross of the two often proves beneficial. The domestic turkey shows its natural traits in the desire for a free range and the secrecy with which it makes its nest. The Bronze, Narragansett, White, Holland, Buff, Slate, and Black are the common varieties; the former, which at two years often weighs thirty-five or forty

pounds, has been called the "King of American fowls." Ducks, of which the Pekin is probably the most popular breed, are raised chiefly for their meat and are commonly used for food on the farms. The raising of geese is not very common in the United States. They fare best near ponds of water and require free range and, given the right conditions, their life is long.

Artificial incubation and cold storage were responsible for a big increase in the poultry business toward the close of the nineteenth century. Egyptians more than two thousand years ago practised artificial incubation with ovens and straw and the Chinese for centuries made use of incubation on a large scale, but not until 1847 does our patent office show any records of methods of artificial hatching. From 1847 to 1870 no patents were granted for either methods or machines. The commercially valuable incubator dates from 1887; in 1900 fourteen patents were granted. The incubator, of course, helps overcome the difficulty of weather conditions and allows the farmer to secure chickens in the numbers and at the times desired. The proportion of chickens hatched is about the same as in the case of the hen, and the chicks are less likely to become covered with vermin.

The first efforts at preservation were made with ice and snow, in cellars, caves, and ice chambers. Water glass, silicate of soda, vaseline, lime water, and other chemicals were used. These methods, especially ice and snow, helped the farmer hold his eggs for better prices, but they were not suitable for commercial purposes, and so large dealers turned to mechanical refrigeration, where the product cooled to a definite temperature and maintained there for an indefinite period, was employed. Eggs were early stored only as a last resort and without proper inspection; inferior goods consequently brought the method into disrepute. Now, however, only perfect eggs are stored. Tainted eggs are used in preparing leather for gloves and bookbinding, for disinfectants, and for shoe blacking. Shells are used as fertilizers. Millions of eggs are used by wine clarifiers, calico print works, dye manufacturers, and by photograph-

ers for dry plates. "Desiccated" eggs are of some importance; by evaporation all or most of the white or yolk is dried out and the produce is used in part in the family trade, but more extensively by bakers and camping parties and expeditions.

Probably the most interesting episode in the poultry industry was the "hen fever" which afflicted the country from 1850 to 1855. It broke out in Boston, where the first Exhibition of Fancy Poultry was held in November, 1849. The next year twenty thousand people came together to view twelve thousand chickens. The West, at first ridiculing the sale of eggs at three dollars a dozen and hens at ten dollars a pair, soon succumbed, Cincinnati holding an exhibition in 1852. At Charleston, Augusta, Mobile and New Orleans the fever raged. Every community and every prominent individual, including Henry Clay and Daniel Webster, seemed to be affected by a sudden love for Cochin-Chinas and Shanghais. Burnham pictures a half grown pullet looking in the top of a flour barrel. Eggs went to a dollar each and more. An ex-Pennsylvania Congressman is credited with this jewel: "Next to a beautiful woman and an honest farmer, I deem a Shanghai cock the noblest work of God." After the boom had subsided one commentator declared that, "judging from the extravagance of their language," some of the speculators in hens, "must have expected the appearance of a breed that should be found equal to laying eggs by the dozen on demand."

Statistics on poultry first became reasonably satisfactory with the Census of 1900. The value of the eggs and poultry produced in 1899 was more than that of the oats crop and with the poultry alive June 1, 1900, practically equivalent to the wheat crop and worth more than the cotton crop. Twenty years later the value of eggs and chickens was about one billion dollars, or about the same as all the farm crops of Texas. The number of chickens was then four times the number in 1880. In recent years there have been about four chickens per individual with a yearly egg crop of about two hundred per individual. Iowa, Illinois,

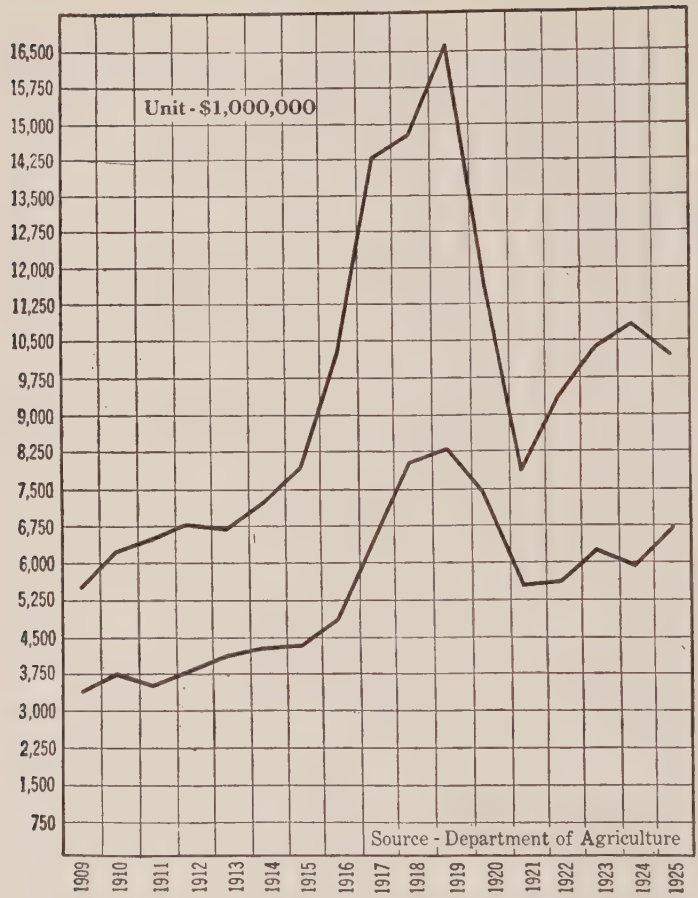

CHART NO. 22. FARM VALUES—UPPER LINE CROPS, LOWER ANIMAL PRODUCTS.

and Missouri are the usual leaders. Fowls other than chickens numbered little more than thirteen million in 1920, turkeys, geese, ducks, pigeons, and ostriches all registering decreases in the decade ending in that year.

Bees.—Beekeeping exploits the blind thrift of an insect. Like the poultry industry it depends to a considerable

extent upon the human element, but the environment must supply nectar-bearing flowers. Rainfall sufficiently heavy to produce abundant vegetation favors the production of honey and wax. Bees have long been kept on many American farms, about three and a half million hives valued at nearly seventeen million dollars being reported in 1920. Farmers who keep bees for large scale honey production often grow buckwheat because the large amount of honey in the flowers assures a double crop. The best export honey comes from hives to which white clover and basswood are accessible, but golden rod and buckwheat blossoms likewise give fine yields. California and Texas yield the largest amounts of honey, the quality of the former being superior. In California among the vast stretches of mountain and canyon good bee forage extends for miles without a break. Favorable climatic conditions lessen the chance of crop failure. Led by F. B. Weed, artificial honeycomb has been produced to increase the yield and with a thin foundation to give better honey for table use. Even, yet, however, our production of honey is little more than a half pound per capita, but the increased application of science insures larger yields for the future. (See chart on page 152.)

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CHAPTER VII

GENERAL DEVELOPMENT OF MANUFACTURES

Drawbacks to Colonial Manufactures.—During the colonial period manufactures were household affairs and on a very small scale as a rule, though the shipbuilding and a few other industries formed notable exceptions. As in England manufacturing was often a by-industry, as when the farmer's family made nails and tacks or wove cloth by the fireside on the long winter evenings.

Numerous factors prevented rapid development, among which one of the most important was the overshadowing preëminence of agriculture due to the fact that food is perhaps the most elementary human need. Profits, moreover, were high in the tobacco cultivation of the South, the grain industries of the Middle Colonies, and the cattle industries south of New England. Labor was also scarce, for few people wanted to work for others long when in two or three years' time they could save enough money to become well-to-do farmers. Labor, moreover, was not massed in towns, but scattered all over the country, and at the time of the Revolution the entire population was little more than that of Chicago in 1920. A third drawback was the lack of free capital, for most of the ready money went into buildings, cattle, live stock, tools, etc. In the fourth place, there were few markets in the colonies, for the economic independence of the farmers and the lack of money wages well-nigh excluded a general market, a difficulty heightened by the high charges of transportation. And, as if these disadvantages were not sufficient, England's mercantile policy of encouraging the colonies to produce raw materials and of restricting manufactures prevented growth to any extent. From 1744 to 1825 Eng-

land prohibited the exportation of various kinds of machinery. In 1699 she prohibited the exportation, from one colony to another or to a foreign country, of woolen goods, in 1732 of hats, and in 1750 she forbade the erection of mills such as "slitting or rolling mill or plate, forge or steel furnaces," for turning out the finer forms of iron products.

Encouragements to Colonial Manufactures—Resources.—Opposed to these disadvantages were certain advantages, namely, natural resources and legislation. Lumber was plentiful and based directly upon the forests rose four manufactures worthy of mention: lumbering, shipbuilding, manufacture of naval stores, and the preparation of pot and pearl ash. Even before actual settlement iron ore was observed in America. It was of two types, bog ore, found in swamps or at the bottom of ponds as the precipitation of minute animals, and rock ore. The former was found in eastern Massachusetts and in a few localities on the New Jersey coast; the latter was found in all colonies as far south as the Carolinas. These resources, however, were scarcely touched at the close of the colonial period.[1]

Agriculture was a help as well as a hindrance, for it supplied, especially in the Middle Colonies, raw materials for the flour, bread, beer, and other industries. Flour milling attained a small share of importance and in practically all of the colonies salt or pickled meat was prepared and exported. Although fisheries supplied few materials directly to agriculture, they gave considerable assistance to such industries as rum distilling and flour manufacturing, for rum and bread were considered indispensable articles of a fisherman's diet. Fish oil and whale oil were more than sufficient to furnish the home needs and this abundance aided curriers and shoemakers. During the eighteenth century the manufacture of spermaceti was perfected and with this as a basis an important candle industry developed; the surplus of animal fats obtained from meat-packing also aided. The abundance of fur-bearing

[1] See Clark, V. S. *History of Manufactures in the United States*, 1607-1860 [Carnegie Publications, Washington, 1916] 76.

animals likewise helped in the manufacture of hats and some other articles.

Encouragements to Colonial Manufactures—Legislation.—Occasionally the British government aided in the development of certain manufactures, for instance, hemp, flax, naval stores, pig iron, etc. Bounties were used, drawbacks on duties offered, lower tariffs levied on colonial than on other products, or goods were admitted free of duty. This encouragement was merely intended to supplement England's supplies and was in no sense designed to encourage competing products in the colonies. Encouragement by legislation consequently came for the most part from colonial assemblies. Massachusetts early required each family to produce three pounds of linen, cotton, or woolen yarn each week for thirty weeks in the year from each spinner under the penalty of a fine of twelve pence for every pound short. Virginia early legislated against the planting of tobacco or corn by mechanics. Virginia and Connecticut at one time required their inhabitants to plant flax for linen and hops for cordage. The latter colony forced the towns to buy cotton imported under public auspices in amounts dependent upon their population. Virginia in 1661 ordered every county to furnish one or more public tanneries and tanners, curriers, and shoemakers, and five years later, four new counties excepted, to set up a county loom. Towns or colonies at times set up public works. Stamford, Connecticut, built a dam and mill, Rhode Island in 1776 attempted to provide saltpeter works in each township, Maryland set up a gunlock factory at Frederick, and Virginia made salt and many of its war supplies. Congress itself ran furnaces to cast cannon and shot for the army.

Probably the most common colonial methods were the granting of bounties, premiums, and subsidies for the production of the desired manufacture. Bounties were merely rewards over and above the market price, premiums were awards accorded to the few examples of excellent quality, and subsidies were rewards offered to particular producers of specified products. Encouragement of the type just

noted was given in practically all of the colonies at some time or other on a wide variety of products, but especially on the textiles. New England colonies or townships and parts of East Jersey often granted land to encourage new industries, particularly to iron works. This help assumed one of three forms: the grant to craftsmen and manufacturers without ownership of a tract of land, water power, or right to use common land; direct aid in the erection of some manufacturing enterprise, such as a mill; and the admission as freemen of competent mechanics who wished to settle in the given township. Towns, especially in New England, occasionally loaned money to manufacturers, with or without interest.

Colonies also at times allowed the raising of manufacturing capital by lotteries, especially after losses by fire. At times, too, they made manufactures legal tender for debt with the express design of encouraging them. So, too, the exemption of manufactures and raw materials from taxation, or the levy of lower taxes than usual was a common occurrence. Monopolies were sometimes allowed when they seemed necessary for the establishment of a desired manufacture. Patents were, of course, frequently allowed in the various colonies for improvements on scythes, distilling and brewing, rice-cleaning machinery, medical compounds, iron manufactures, etc. At times, also, practically all of the colonies forbade the exportation of such things as leather, hides, wool, iron, lumber, naval stores, and articles of minor importance in order to insure themselves raw materials. Export duties were likewise often intended to husband the supply of these and other needed raw materials. Georgia, for instance, expressly declared in the preamble to her act of 1773: "The exportation of raw meat hides from this province tends to discourage industrious tradesmen and laborers." Tariff duties were also sometimes intended to help manufactures, but the tariff policy of this country will be discussed in a separate chapter.

Regulation of industry aided at times, for example, the milling and meat industries being carefully regulated

through examination and the use of appropriate brands. Then, too, some colonies, such as Massachusetts in 1640 and Virginia and Maryland at later dates, made provisions for the teaching of given trades. Colonies also favored their manufactures indirectly at times by tax and license laws. For instance, Connecticut at one time in levying taxes on merchant sales expressly excluded articles of local growth and manufactures and Pennsylvania, though licensing peddlers, exempted those who sold only articles of local manufacture.

Restrictions.—Occasionally colonial laws imposed restrictions for fire or health precautions. Massachusetts required a permit from town authorities in seaport and market towns for the erection of potters' kilns, bakeries, or chocolate mills, and similar regulations for bakeries and coopers' shops were enforced in Philadelphia. Believing that ill smells from the burning of oyster shells and the distilling of rum had caused an epidemic, New York City early in the eighteenth century prohibited those practices. Restrictive legislation, though not always found, was most widespread in the case of printing. Governors Berkeley, Dongan, and Andros prohibited or discouraged printing in Virginia, New York, and New England. Pennsylvania and Maryland passed laws intended to make the procurement of liquor difficult for those employed in iron works; Connecticut, on the other hand, at one time allowed the importation of liquor duty free for the New Haven iron employees. Restrictive laws in liquor legislation usually forbade the establishment of houses in a prescribed zone or forbade tavern keepers to let iron work employees have the liquor.

Effect of Revolutionary War.—The Revolutionary War naturally had a beneficial effect on manufactures, for anything that interrupts commerce, such as war, embargo, or high tariff, acts as a distinct stimulus to manufactures. The foreign importations are reduced and prices rise, while at the same time the exports of raw materials are curtailed and their prices fall. Hence the profit dangling before the eyes of American enterprise leads to an imme-

diate increase of manufactures, though, to be sure, certain manufactures may suffer. Sheep raising was extended during the Revolutionary War, mutton was barred from many patriotic tables, and the methods of colonial days were continued. For instance, Philadelphia offered prizes for such products of home industry as woolen and cotton cloth, stockings, leather, shoes, whisky, iron ware, and paper hangings. Outside of government works, because of depreciated paper money, unsatisfactory character of the leased Hessian labor, general scarcity of workers, etc., the commercial manufacture of iron declined, but in steel manufacture definite progress was made. Firearms, salt, textiles, and most manufactures, however, thrived unless war disturbed the conditions, as was sometimes the case in New Jersey, lower Virginia, the Carolinas, and Georgia. In South Carolina Tory raiders burned the loom houses of the settlers and killed their sheep even when they could not use them for food.

When the Treaty of Paris was signed in 1783, English merchants flooded our markets with the hope of stifling our manufactures and regaining their old market. A temporary crisis developed in 1783 and 1784 with enough town artisans and manufacturers unemployed to create sentiment favorable to the New England and Pennsylvania tariff laws of 1785 and 1786. England had all the advantages of skilled labor, low wages, permanent working classes, subdivision of labor, relatively large scale production, and a monopoly on the textile and iron-manufacturing machinery. The American political condition was, moreover, chaotic. The United States, nevertheless, had some advantages, for the high freight rates acted as a tariff in her behalf, taxes were low, and so were raw materials. Furthermore, the Federal law in 1792 and subsequent state laws exempted from military service men who worked in glass, iron, or silk plants. Eventually, especially after the machinery was smuggled in and the Napoleonic wars gave England a good field for export of manufactured goods in Europe, our manufactures developed with much greater rapidity.

Improved Machinery.—In England, shortly after the middle of the eighteenth century a revolution occurred in the manufacturing industries, for James Hargreaves invented his "spinning jenny" in 1764, Richard Arkwright his water frame in 1769, and Samuel Crompton his "mule," a combination of the two, in 1779. No longer could one weaver keep half a dozen or more spinners busy, for weavers now tended to lag behind spinners. In 1785, however, Edmund Cartwright invented the power loom, and about eight years later Eli Whitney, an American school teacher, invented the cotton gin, which insured an abundant supply of clean raw material. Watt's steam engine, patented about 1769, was first applied to cotton manufacture at Papplewick, England, in 1784. England, as previously noted, sought to monopolize these inventions and in 1774 Parliament made punishable by a fine of two hundred pounds the exportation of any tools used in cotton and linen manufactures. In 1781 this prohibition was extended to machinery in woolen and silk manufactures, and, moreover, a prison term of twelve months was added. A year later Parliament forbade, under a penalty of five hundred pounds, the exportation of machinery used in printing cotton goods, and the ban and penalty were also extended to tools needed in the iron industry. Severe penalties were likewise inflicted on all those who tried to persuade English workers to emigrate. Not until 1825 were these restrictions removed.

They never, however, prevented the machinery from being erected in this country, for even before the Revolution a spinning jenny of the Hargreaves type was operated in Philadelphia and in 1786 Massachusetts granted Robert and Alexander Barr one thousand dollars to aid them in constructing machines, based on the Arkwright models, for carding, roping, and spinning cotton and wool. According to Professor E. L. Bogart, the first cotton factory in the United States was erected at Beverly, Massachusetts, the next year. Apparently the early attempts to duplicate English textile machinery at Beverly and Bridgewater, Massachusetts, Statesburg, South Carolina, and

Philadelphia, were unsuccessful and not until 1790 did Samuel Slater, aided by Moses Brown, succeed in opening the Pawtucket, Rhode Island, cotton mill, the first successful one in the United States. By 1800 it had twenty-nine companions near-by and in 1809 there were sixty-two cotton mills in the country with twenty-five more in process of construction. In 1814 Francis C. Lowell at Waltham, Massachusetts, brought the processes of spinning and weaving under one roof, and his establishment has been rightly called "the first complete factory in the world."

Growth of Manufactures Since 1807.—The introduction of the factory system was completed by the Embargo and Non-Intercourse acts, and the War of 1812, for as Gallatin wrote in reference to the former in 1809:

> A great American capital has been acquired during the last twenty years; and the injurious violations of the neutral commerce of the United States, by forcing industry and capital into other channels, have broken inveterate habits, and given a general impulse, to which must be ascribed the great increase of manufactures during the two last years.[2]

During the embargo wearing homespun was made a test of patriotism, states subscribed capital to manufactories, mutton was barred from tables, merinos were imported, and banquets and dinners were held, all with the idea of encouraging American manufactures. The stimulus continued, for under the Non-Intercourse Act and the restrictions following Macon Bill No. 2 commerce was lessened. Textile manufactures, some forms of iron manufacture, hardware, liquors, and others increased. Adam Seybert, after enumerating various manufactures, declared:

> The above enumerated facts were obtained prior to the declaration of the late war; during that contest many new establishments were added, at the same time such as had existed were subsequently enlarged. It was during the war that our resources in this branch of public economy became more fully developed.[3]

[2] *American State Papers, Finance* [Government Printing Office, Washington, 1832-1859] Vol. II, 430.

[3] *Statistical Annals of America*, 6.

By 1809 the total value of manufactures was nearly a fifth of a billion dollars, by 1849 over five times as great, and thereafter as indicated in the table which follows.

Manufactures: Summary, 1849-1923

	Establishments	Average Number of Wage Earners	Primary Horsepower	Value of Products
Factories and Hand and Neighborhood Industries				
1849	123,025	957,059		$1,019,107,000
1859	140,433	1,311,246		1,885,862,000
1869	252,148	2,053,996	2,346,142	3,385,860,000
1879	253,852	2,732,595	3,410,837	5,369,579,000
1889	355,405	4,251,535	5,938,635	9,372,379,000
1899	512,191	5,306,143	10,097,893	13,000,149,000
Factories, Excluding Hand and Neighborhood Industries and Establishments with Products Valued at Less than $500				
1899	207,514	4,712,763		11,406,927,000
1904	216,180	5,468,383	13,487,707	14,793,903,000
1909	268,491	6,615,046	18,675,376	20,672,052,000
1914	275,791	7,036,247	22,437,072	24,246,435,000
1919	290,105	9,096,372	29,504,792	62,418,079,000
Factories, Excluding Products Valued at Less than $5000				
1914	177,110	6,896,190		23,987,861,000
1919	214,383	9,000,059		62,041,795,000
1921	196,267	6,946,570		43,653,283,000
1923	196,309	8,778,950	33,094,228	60,555,998,000

The phenomenal growth in values from 1914 to 1919 represents inflation in large part and should be divided by two. According to government figures manufactures declined 1919 to 1921, wage-earners and values falling sharply, but by 1923 employees and wage-earners were again near the 1919 figures.

Population.—Among the factors causing the United States to rise from fourth place in world manufactures in 1860 to first place with a product worth more than that of

its two nearest competitors, the United Kingdom and Germany, in 1894, population growth will be emphasized first. Mere numbers create a demand for necessary manufactured

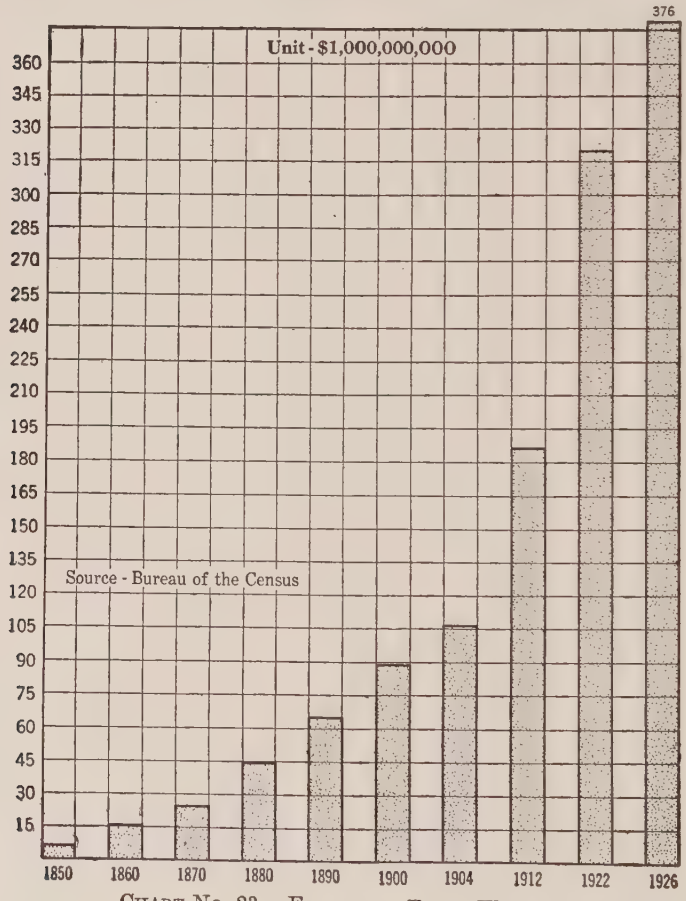

CHART No. 23. ESTIMATED TOTAL WEALTH.

articles; hence it is worth while to note that the population of continental United States increased from less than four millions in 1790, to eight times that number in 1860, and to nearly 106,000,000 in 1920. Among the thirty-

seven million immigrants more or less who have entered this country in the last century were many skilled and unskilled laborers. City development has also stimulated and been stimulated by manufactures, especially during the last half century. As late as 1820 only 4.9 per cent of the population lived in cities, but a hundred years later the percentage was 51.4. If to incorporated places of over twenty-five hundred, we add unincorporated places and towns slightly smaller, we can state that six out of ten in our population live in cities, and as will be noted later, our cities have most of the manufacturing product.

Capital.—Another factor in the development of manufactures has been the growth of capital. The discovery of gold in California in 1848 soon showed a marked effect on industries because, for the first time in our career as a nation, we were able to borrow capital. Then, too, improved banking through the Suffolk, New York Safety Fund, free banking, national and Federal Reserve systems to be noted in a later chapter, all aided materially, as did the general growth of wealth, which increased from little more than $7,100,000,000 in 1850 to $376,000,000,000 in 1926. This increased wealth, of course, means greater purchasing power and thus acts as a stimulus to industry.

Natural Resources.—Agricultural, mineral, and forest resources are considered in separate chapters, but it is necessary to keep in mind the fact that they supplied the raw materials for many industries and made possible the leading position attained in world industry. Here we might merely note by way of illustration that the United States produces about two-thirds of the world's supply of corn, over a fourth of the oats, about a fifth of the wheat, and a seventh of the barley. In mineral production she leads the world with a product worth about $7,000,000,000 in 1920; of the more important metals useful to man she lacks only tin. She produces nearly a third of the lead and zinc about two-fifths of the iron and coal, over half of the copper, and nearly two-thirds of the petroleum in normal times, and though usually second to South Africa in gold and to Mexico in silver, she produces about a fifth of the

former and a fourth of the latter. Her original stand of timber covered perhaps 850,000,000 acres and contained 5,200,000,000,000 board feet; though now reduced to about 550,000,000 acres and 2,500,000,000,000 board feet, it is still of the utmost importance in manufactures.

Government Aid.—Government aid has also been an active agent in the development of manufactures. The protective tariff has attracted capital by restrictions on foreign competing products and the assurance often of a more than fair price. The government likewise by its recent leniency in the case of big business has stimulated the development of large establishments already begun on a considerable scale. Of a similar effect has been the encouragement of banking under the national and Federal Reserve systems. More indirect aid has likewise come through the low taxes in this country as compared with taxes in some of the European countries. An active factor has been the encouragement to inventors through a fairly liberal patent system. The first general law, that of 1790, gave inventors protection on patented articles for a period of fourteen years, that of 1836 allowed an extension to twenty-one, and that of 1870 set the life of a patent at seventeen.

War.—In the period since 1815, four wars, the Mexican, Civil, Spanish-American, and the recent World War, have affected American industries. When thousands of workers are called to the front, their places must be filled and a premium has thus been placed upon the great inventive ability of the Americans, with the result that much labor-saving machinery has been developed. The war demand itself is a big factor in the increased production of food, clothing, arms, and ammunition. So, too, the rise in prices caused in part by the over-issue of greenbacks and by the war tariffs stimulated manufactures during the sixties. Some authorities even insist that the Civil War inaugurated an industrial revolution comparable with that in England a hundred years earlier.

When the World War broke out in 1914 American manufactures were somewhat depressed, but the demand for

supplies of all kinds, which the crippled industries of Europe could not supply, led to rapid expansion. Our exports to the five leading nations of the Entente Allies increased from less than a billion dollars in the fiscal year of 1914 to more than three times that sum in 1918. Naturally the foreign orders were for explosives, iron and steel, copper, brass, bronze and zinc, automobile parts, textiles, leather products, and foodstuffs. This diversion of labor and capital into war industries, however, caused others to suffer. Building operations were practically stopped, some factories were closed, and unemployment and high prices showed an uneven distribution of prosperity. When the United States entered the war, the Priorities Board assigned fuel, transportation facilities, labor, and even credit first of all to war industries. Those producing non-essential goods were thus forced to curtail or stop operations. Depression, as already noted, injured business in 1920 and 1921, but the dye and chemical industries seem to have been firmly established as the result of the war.

Transportation Facilities.—The development of wagon roads and canals, the improvement of rivers, the invention of the telegraph, telephone, wireless, and modern methods of communication, the extension of the express and railroad business and improved highways and motor trucks, to be discussed in a subsequent chapter, all stimulated manufacturing by widening markets and increasing the facilities for ordering supplies. Nor should our billion dollar advertising business be overlooked as a factor in growth.

Power.—Another factor in the development of our manufactures has been abundant power. In the early period water power was widely used, then steam power, and more lately electricity derived from water power. In 1869 the total primary horse power used in manufactures was about 2,350,000, in 1899 nearly five times as much, and in 1919 about 29,500,000. In 1889 steam supplied 78.3 per cent of the power, but since then the percentage has decreased. In 1919 over one-third of the rented power used was electric and although coke is showing a steady increase, fuel

oils, gasoline and other volatile oils, and gas seem to be gaining steadily at the expense of anthracite and bituminous coal. In 1923, a new high point, over 33,000,000, was set in primary horse power employed. According to various estimates the streams of this country can generate 40,000,000, or more horse power, an amount sufficient to support a manufacturing population of more than 250,000,000. The United States is better equipped in this respect than any nation in the world. Shaler believed some time back that whether measured by horse power or manufactured products the energy derived from water power in this country was greater than in all other lands combined.

Character of People.—In the last place, in the character of the people we find the most important causes of industrial progress. In health, physical strength, endurance, intelligence, judgment, ambition, energy, coöperation, perseverance, imagination, mechanical ingenuity, and technical skill American employees and employers rank high. Adaptations of the sewing machine, printing press, steam engines, and numerous other inventions show mechanical ingenuity and technical skill. Tenche Coxe, writing about 1813, referred to this ability, and Sir Morton Peto, writing in 1865, declared:

> Mechanical contrivances of every sort are produced to supply the want of human hands. Thus we find America producing a machine even to peel apples; another to beat eggs; a third to clean knives; a fourth to wring clothes; in fact there is scarcely a purpose for which human hands have been ordinarily employed, for which some ingenious attempt is not made to find a substitute in a cheap and efficient labour-saving machine.[4]

Interchangeable Mechanism.—The growth of interchangeable mechanism and standardization are worthy of mention as proof of mechanical ability. In the first the essential point consists in making each part of the machinery exactly like the corresponding part in every similar machine. Large scale production lessens the cost and

[4] *Resources and Prospects of America* [London, 1866] 100.

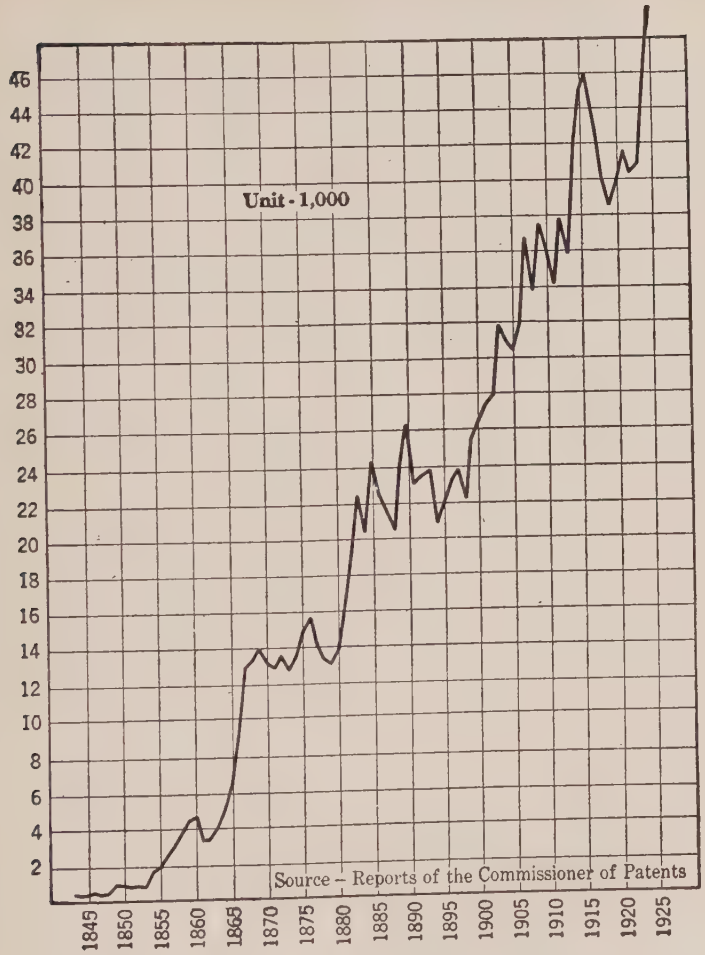

CHART NO. 24. PATENTS ISSUED.

when machinery wears out or breaks down, the broken part can be ordered by number. Eli Whitney probably used this invention first in firearms, but its widest application came in the sewing machine. By 1880 it had effected a revolution in ammunition, locomotive, railroad, watch, clock, and agricultural machinery industries.

Standardization.—Closely connected with interchangeable mechanism was the standardization of machinery and parts. For example, in the manufacture of screws, iron beams, clothing, machinery, etc., the sizes best adapted to the general trade were turned out in large numbers at reduced costs. Unusual sizes or dimensions, on the other hand, were filled by special order.

Patents.—Another proof of the inventive ability of the Americans is seen in the growth of patents. Washington was an inventor of no mean ability and as president he urged the passage of the first patent law. But in 1790 only three patents were granted and during the first three years only fifty-seven. In the early days it was the business of three cabinet officers to decide whether or not patents should be issued. One clerk could do all the necessary work by giving part of his time to it. Business continued to grow, however, and in 1836 the Patent Office with a commissioner at its head was created. To-day he has a staff of about a thousand employees. Prior to 1840 the number of patents granted was less than five hundred per annum, twenty years later about ten times as many, by the close of the nineteenth century about twenty-five thousand, and now approximately double that number. Ordinarily, too, twice as many patents are applied for as are granted. Not every country can boast men of the type of Thomas A. Edison and Elihu Thomson; in the period from 1871 to 1895 alone, the former was credited with 711 inventions and the latter with 394. (See chart, p. 169.)

Division of Labor.—In this connection mention must be made of the division of labor. For instance, in 1776, pin manufacture was already divided into 18 separate operations, while about 140 years later in some New England factories shoe manufacture required 173 different operations, a modern high grade watch used 1,088 different sets of workmen, a typical cotton mill required about 100 different occupations, and ready-made coats in some New York factories no fewer than 39 distinct processes. Possibly no better example familiar to the student can now be given than that found in an automobile establishment.

The most marked advantage of the division of labor is increased production. The ratio of machine to hand production in screws, to note one example, was 4,491 to 1 a decade ago. Greater skill, better distribution of work according to ability, a common heritage of knowledge through books, charts, and manuscripts, the economy in use of tools, machinery, and equipment, economy of time and energy, and the better utilization of resources, climatic conditions, labor supply, and industrial intelligence of the different countries are decided advantages.

Distribution of Values.—In the early period of our history, to summarize, the New England and Middle States supplied most of our manufactures and as late as 1859 nearly three-fourths. The percentage for both, however, has steadily fallen. In the case of the Central States, with a slight relapse, notably 1889-1899, the movement has been upward. The movement for the Southern States has varied little in total amount, though fluctuations have been apparent, a low point being reached in 1879; but since then a slow gain has been recorded and by 1919 the percentage had more than doubled. In the Western and Pacific States fluctuations have occurred, though the movement has been steadily upward for the latter since 1869. The accompanying chart, although taken from somewhat contradictory census reports, illustrates fairly well the general movement, 1849-1919.

Naturally the older states led in value of product. In 1859 New York was first with $378,870,939; Pennsylvania, Massachusetts, and Ohio were the other leaders. Sixty years later New York and Pennsylvania still led with products valued at $8,867,004,906 and $7,315,702,867, but the naming of the next eleven leaders, all of which had a product worth over $1,200,000,000 and two of more than $5,000,000,000 shows that industry was migrating, or following the center of population; they were: Illinois, Ohio, Massachusetts, New Jersey, Michigan, California, Indiana, Wisconsin, Missouri, Connecticut, and Minnesota. The seven leaders with a combined area of slightly more than the state of Texas, or 266,505 square miles, as compared

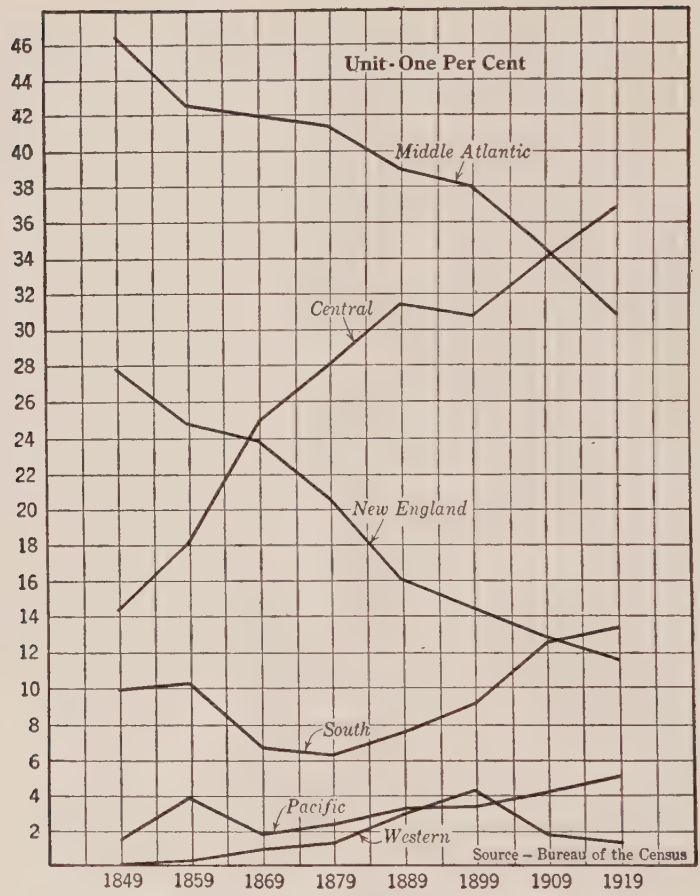

CHART NO. 25. DISTRIBUTION OF MANUFACTURING VALUES.

with 265,896, employed 59.8 per cent of the wage-earners and produced 60.7 per cent of the product. No changes were recorded in 1923 ranking except the passing of Illinois by Ohio and of Massachusetts and New Jersey by Michigan.

Leading Cities.—Manufactures are, of course, concentrated largely in the cities. For instance, in 1899 the

value of manufactures in New York amounted to $1,371,358,468, or more than those of any state in the country except New York and Pennsylvania, and those of Chicago amounted to $888,945,311, or more than any one state save the four leaders—New York, Pennsylvania, Illinois, and Massachusetts. In each instance it was approximately two-thirds of the state product. In 1899, although there had been a slight decrease from 1889, the 164 principal cities of the country had one-fourth of the population but three-fifths of the manufactured products. In 1889 the value had been over two-thirds of the total. A very high proportion still continues to be made in the largest cities; for example, in 1919 and 1923 about three-fifths of the total product of New York and Missouri was turned out in New York City and St. Louis respectively and about two-thirds of the product of Illinois in Chicago. The proportion for the chief city was not quite so high in some of the other states, notably those containing Philadelphia, Cleveland, and Boston.

The Old South.—The South prior to the Civil War was noted for agriculture primarily. In manufactures, with some exceptions, it was lamentably weak, contributing in 1860 less than one-tenth of all manufacturing values. In some manufactures the deficiency was more marked than in others. Thus, the South contributed only about seven per cent of all values in cotton manufactures, three in woolen manufactures, three and a half in men's clothing, one in hats and caps, and a little over four in boots and shoes. In the case of iron products—pig iron, bar, sheet and railway, iron founding, etc., and even agricultural implements—the South had less than one-tenth of all values. Only fifteen per cent of the coal values, little more than three per cent of the iron ore, and only seven per cent of the lead came from the South. But in copper, area and population considered, the South was well ahead of the North with about two-fifths of all tons mined. The South had about a sixth of flour and grist mill values and over a third of the value of slaughtered animals, thus ranking higher in crude manufactures than in finished

products. Still, Hinton R. Helper's words have some weight:

> In one way or another we are more or less subservient to the North every day of our lives. In infancy we are swaddled in Northern muslin; in childhood we are humored with Northern gewgaws; in youth we are instructed out of Northern books; at the age of maturity we sow our "wild oats" on Northern soil; in middle life we exhaust our wealth, energies, and talents in the dishonorable vocation of entailing our dependence on our children and our children's children, and to the neglect of our own interest and the interests of those around us, giving aid and succor to every department of Northern power; in the decline of life we remedy our eyesight with Northern spectacles, and support our infirmities with Northern canes; in old age we are drugged with Northern physic; and, finally, when we die, our inanimate bodies, shrouded in Northern cambric, are stretched upon the bier, borne to the grave in a Northern carriage, entombed with a Northern spade, and memorized with a Northern slab.[6]

While the northern and western states were increasing their manufactures, 1859-1899, the South, especially during the first twenty years of the period, was struggling with debts, with the wreck and ruin wrought by the Civil War, with little credit, with unsystematized railroad lines, and with disorganized labor. In 1869 only 6.9 per cent of all manufacturing values were reported from the South and in 1879 only 6.3 in comparison with 10.3 in 1859 for the Census South, which was slightly more than the South of the Confederacy previously noted.

The New South.—Since 1879, however, a slow increase has occurred, the percentage in 1919 and 1923 being somewhat less than 13.5. As proof of this industrial development three manufactures may be noted somewhat in detail, though the South has progressed in other manufactures than iron and steel, lumber, and cotton. One of the others is in the production of oils, the Texas and Louisiana fields being mentioned in another connection. Here we may merely note that the distinctively southern manufactures

[6] *The Impending Crisis* [Burdick Brothers, New York, 1857] 22, 23.

such as cotton ginning, rice milling, molasses making, sugar refining, and turpentine distilling recovered and began to advance steadily during the last decade of the nineteenth century.

Toward the close of the nineteenth century the Birmingham ores, exploited about 1870, became of considerable importance. Favored by limestone, iron, and coal in close proximity to each other and by good transportation facilities the Birmingham district is developing rapidly, the population of the city increasing from little more than three thousand in 1880 to nearly 179,000 in 1920. In the same period the production of pig iron increased sixfold, rising to well over two million tons in 1920 and in recent years threatening the three million mark. The product is sent not alone to southern markets but also north to Mississippi and Ohio river points, where it meets Chicago iron as at Louisville and Cincinnati. The Alabama iron and steel are also shipped to Philadelphia and New York. In Maryland, Virginia, West Virginia, Kentucky, Tennessee, and Texas some iron is produced, but the combined output is less than half that of Alabama.

Possibly the most spectacular development of any southern manufacture has been that of lumbering. This industry was known in colonial days, but its development has been rapid only since the depletion of northern resources. In 1869 the South had only a tenth of the nation's lumber cut, by 1899 nearly a third, and in recent years nearly half, though it is now hard pushed by the Pacific and Mountain states which have about one-third of the cut. In 1924 the leading southern states were Louisiana, Mississippi, Alabama, Arkansas, and Texas. Washington and Oregon were ahead of all southern states, and California occupied fifth place. But no other state compared in cut with the southern states mentioned. In all of the southern states lumber and timber products rank high and in over half of them employ more workers than any other industry. Turpentine and rosin are especially important in Georgia and Florida.

Until 1870 the leadership of New England in cotton

manufacturing had never been questioned, but in that year the industry was started in a more marked way in the South. At first thought the advantage seemed to lie wholly with the South. The Georgia and Carolina mills were in the midst of the cotton fields. The poor whites of the mountains supplied cheap labor, one mill at first securing operators at a yearly wage of $169. Electric power developed from mountain streams, the best in new mill equipment, a large market at home, loose laws, and low taxes were additional aids. But charges on the cloth sent north to be sold or dyed were high, southern mills had to import materials from a region as far west as Texas, and cheap labor frequently meant, not low labor cost, but inferior goods. Constant supervision was necessary and the working force had to be all white or black, neither race being willing to tolerate mixing on the job. Then, too, corporations were at times compelled to own hospitals, hotels, banks, churches, schools, and to give assistance to lecture courses and military and baseball outfits. On the whole, however, advantages seem to outweigh disadvantages and the South is slowly gaining on New England in spite of the latter's long established industry, trained labor, abundant capital, subsidiary enterprises such as dye houses and bleacheries, concentration in few localities, and more favorable climate.

In 1879 North Carolina, South Carolina, and Georgia produced only about one-sixteenth of our cotton goods output, but now they produce approximately one-third. The New England manufacturers are turning their attention more and more to the finer grades of cloth, the South producing the coarser materials such as sheeting and ducks. Early in the twentieth century the cotton consumed in the South passed the New England consumption and since 1922 has more than doubled northern consumption. In all of the South in 1880 there were little more than 500,000 active cotton spindles, whereas New England had nearly 9,000,000. Since that date New England spindles have barely doubled, but southern spindles have increased to approximately 17,000,000, being in 1925 more than in New

England and almost as many as in the remainder of the country. Equally as rapid as the increase in cotton manufactures has been the increase in the utilization of by-products. The cotton seed, long thrown away, is now manufactured into cooking oil or fed to live stock.

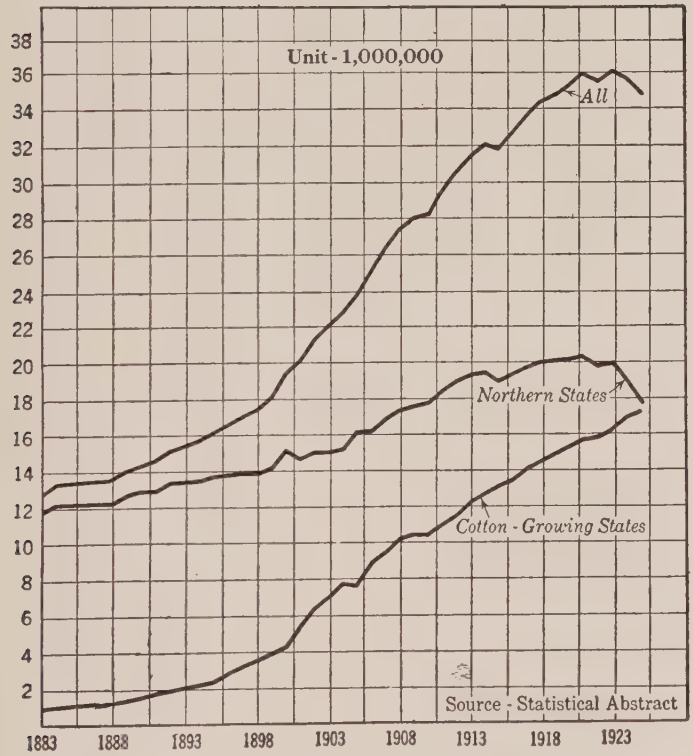

CHART NO. 26. ACTIVE COTTON SPINDLES.

Important Manufactures.—Even in an introductory text in which space is very limited mention should be made of some manufactures, notably foodstuffs, textiles, iron and steel, and leather. In other chapters references are made to such manufactures as lumber, automobiles, and the like.

In the colonial period meat and meat products entered

the export trade to a considerable extent and by 1859 the slaughtering and meat-packing products amounted to nearly $213,000,000. Manufactures of soap, candles, leather, glue, bone-black, etc., also increased. In pork-packing, the most important industry, Cincinnati led from about 1818 to 1861, Chicago taking first place in the early sixties. In 1899 the value of meat-packing was about $800,000,000, but in 1919 nearly $4,250,000,000. Because of deflation and lowered European demands the value fell to less than $2,600,000,000 in 1923. Another important food industry was flour manufacture. For a dozen years prior to the Revolutionary War biscuit flour made up half of Pennsylvania's export values. In 1859 flour and meal were valued at $250,000,000 and from then to 1900 that industry ranked first or near the top. In recent decades the industry has lost in relative importance, though it has shown more of a tendency toward concentration and has become a large scale industry. The value of the products doubled from 1909 to 1919, but lost that gain by 1923, now being worth little more than $1,000,000,000.

Cotton has led the textile industries in recent years due primarily to inventions and abundant raw materials. In 1859 the value was more than $115,000,000 and forty years later nearly three times as much. In recent years the value has been about $2,000,000,000, approximately a fourth being produced in Massachusetts and almost as much in North Carolina and South Carolina combined. Knit goods, of which hosiery is the most important, were worth $848,177,000 in 1923 in comparison with little more than $1,000,000 in 1849. The rapid growth was due in part to the tariff, but primarily to inventions. Underwear, too, increased in value, and like hosiery changed from a home industry to a factory product. Some silk manufactures were made in 1810, but the value as late as 1849 was less than $2,000,000, in 1899 about sixty times as much, and in 1923 about $761,000,000. Woolen manufactures, among the oldest in the world, were early established in the colonies and by 1700 fulling mills were rather common. The first worsted cloth was made in 1843. It is manufactured

from longer and coarser fibered wool than the woolen proper and is so tightly twisted when spun that the product is smooth, whereas the other is soft and rather fuzzy. Improved machinery, like worsted combing machines, and the fact that during the Civil War worsted uniforms proved easier to keep clean than woolen cloths helped in the development of worsteds, which by 1919 with a value of more than $700,000,000 practically doubled woolen cloths. By 1899 the United States was producing 80,000,000 square yards of carpets, or one yard per individual. Since then the tendency has been downward, a decrease of a third having occurred by 1919. In 1923, the value of carpets and rugs, wool, other than rag, was approximately $200,000,000. Howe's sewing machine was responsible for a big increase in the clothing industry. After 1876 the influx of Russian Jews led to the sweating system in which a team of three to five persons made the complete garment at a low expense but at a heavy social cost. The manufacture of women's ready-made clothing was not important in the early period, being worth little more than $7,000,000 in 1859, or a tenth that of the men. By 1919 the value of the products was slightly more than $1,200,000,000, or a little in excess of men's clothing. Over half of the combined product came from New York City. Slight gains in value were recorded for 1923. Without discussing other textile manufactures we shall note that in general all made marked increases except linen. In spite of labor-saving machinery and the use of prizes prior to the Civil War little progress has been made in linen manufactures, though both 1921 and 1923 revealed slight increases.

Leather manufactures in frontier communities are nearly as important as cloth. The colonists had an abundant supply of raw materials and early made use of deerskins and hides of sheep and cattle. Men often wore coats, vests, trousers, and stockings of leather, and the women used leather skirts, sunbonnets, and aprons. But when leather is mentioned we ordinarily think, not of clothing, harness, pocketbooks, trunks, and the like, but of shoes.

In the early period the industry was an itinerant one, the shoemaker carrying his meager outfit—lapstone, hammer, various shaped awls, shoulder stick, apron, and waxed thread—from place to place. Lynn's preëminence in the shoe industry is largely due to one of these early shoemakers, John Adam Dagys, who settled there, imported English and French shoes, dissected them, threw out the faults and made the necessary corrections, partly through the aid of the abundant and cheap female labor in the nearby fishing towns. By 1795, Lynn made 300,000 pairs of shoes yearly. The use of wooden shoe pegs began about 1811 and the modern factory system four years later. Practice in New England, especially in the Boston region, led to the discovery of trade secrets and to a vast superiority over other workers whose products were sometimes so poorly made as to require the soaping of the wearers' heel and stocking toes and lead to the belief that corns were hereditary. New England also started the custom of making "rights" and "lefts" first for the men, then for the women, and finally for all. Standardization in size and uniformity in fullness at the instep followed. One of the early machines in the shoe industry rolled the leather in such a way as to make it hard and durable. Six years later, in 1851, Howe's sewing machine was adapted for work on the uppers. From 1861 on the McKay machine for fastening soles to uppers was developed. Improvements in machinery reduced the labor cost on a pair of shoes from $4.08 in 1859 to 35 cents in 1899. Specialization also entered the manufacture in a marked way, Lynn, for example, becoming famous for women's shoes, and Brockton for men's. The value of boots and shoes rose from about $166,000,000 in 1879 to about $1,155,000,000 in 1919. For several years we have been producing about three pairs of boots and shoes per capita. Massachusetts with a third of all values still produces as much as the next two states, New York and Missouri, combined.

Iron manufactures were of some importance in the colonial period, especially in Virginia and to the north, but England's prohibition in 1750 prevented the manufacture

of the finer forms. Wars, the protective tariff, fuel, the ore, a spirit of enterprise, the development of railroads, and improvements in methods stimulated the industry. Cort's puddling furnace and grooved rolls, invented in England and later applied here, were early improvements. The Bessemer process, whereby steel was made by running molten iron into a converter through which air was blown to eliminate the carbon, was scarcely used in the United States until after the Civil War, primarily because of the difficulties with William Kelly of Kentucky who had made somewhat similar inventions. It was early discovered, however, that the Bessemer method would not apply to phosphorus-bearing ores, and a new method, the open hearth, gradually came into use. By the new process pig iron was mixed with scrap iron in a brick-lined furnace, and when melted the desired elements were added. With this method steel could be made out of pig iron which contained as much as a tenth of phosphorus in place of a thousandth as in the Bessemer process. Although the open hearth process is virtually as old as the Bessemer less than half as much iron was produced by it in 1899. Thereafter the scale began to turn and in 1919 four times as much steel was produced by the open hearth method as by the Bessemer. All iron manufactures in 1809 were worth less than $15,000,000, in 1859 about $200,000,000, and in 1919, twenty times as much. With other products composed largely of iron and steel, such as automobiles, agricultural implements, and electrical apparatus, the value amounted to $9,400,000,000. In 1923 the output of steel works and rolling mills alone was worth nearly $3,200,000,000, about two-thirds of the product coming from Pennsylvania and Ohio. In 1925 the steel output amounted to approximately 44,000,000 tons.

In 1859 four manufactures—flour and meal, meat packing, cotton goods, and lumber planed and sawed—had a value ranging from a little less than $250,000,000 to a little more than $100,000,000. In 1923, seventeen manufactures had a value in excess of $1,000,000,000, motor vehicles leading iron and steel, steel works and rolling

mills by a slight margin. According to *Commerce and Finance,* April 13, 1927, the total value of all manufactures in 1925 was $62,705,714,000, slightly in excess of 1919. The 1925 values for the sixteen industrial groups follow:

Food and kindred products	$10,418,536,000
Textiles and their products	9,122,858,000
Iron, steel and products excluding machinery	6,461,668,000
Lumber and allied products	3,688,552,000
Leather and its manufactures	1,767,581,000
Rubber products	1,255,414,000
Paper, printing and related industries	4,143,685,000
Chemicals and allied products	6,430,027,000
Stone, clay and glass products	1,640,652,000
Metals and products other than iron and steel	2,833,770,000
Tobacco manufactures	1,091,001,000
Machinery, excluding transportation equipment	5,020,231,000
Musical instruments and phonographs	231,687,000
Transportation equipment, air, land and water	5,451,753,000
Railroad repair shops	1,332,679,000
Miscellaneous	1,815,570,000

Causes of Localization.—Before considering in detail the localization of industry, or the centering of certain products in particular states or cities, attention will be directed to the main causes of localization. In the Census Report of 1899 seven main reasons were listed: nearness to raw materials, proximity to markets, water power, supply of labor, abundance of capital, favorable climate, and the momentum of an early start. The importance of raw materials in localization may be noted by the fact that in 1899 Baltimore had 64.4 per cent of the oyster canning and preserving and Connellsville 48.1 per cent of the coke. Since the beginning of our history the center of manufactures has followed the center of population westward with lagging steps; the one is now in Indiana and the other in Ohio. The manufactures of New York and Pennsylvania are nearly equal in value to the manufactures of all states west of the Mississippi with the Southern States added. Good transportation facilities and especially waterways

modify proximity to markets, but in general where the raw materials or products have a great weight or bulk in comparison with their value manufactures are located near markets and raw materials. Water power was an important factor in the localization of silk goods, hosiery, knit goods, pulp manufactures, and other industries, and with the recent development of electric power will more than regain the place occupied by mineral fuels. Immobility is one of the characteristics of labor, and so industries are generally established where the labor supply is good. In the West in the early period, because of the fact that labor was largely absorbed in agriculture, there could be little development of manufactures. Equally important with labor in localization is a supply of capital or good banking facilities. One of the reasons why New Bedford started as a cotton manufacturing center in 1850 was the capital set free because of the decline of whaling. Climate, if favorable, has an invigorating effect on labor and consequently makes it more productive. The cool moist climate of the New Bedford and Fall River regions, moreover, proved especially favorable to the development of cotton spinning. The momentum of an early start, as, for instance, that of Lynn in boots and shoes, aids in the development of an industry by drawing capital and skilled labor.

Other causes of localization may be referred to. For instance, in New England an industry might spread down a valley, while topographical conditions would prevent its spread to a near-by region. Chance, also, may play an important part. Lynn's importance is due in part to the fact that a Welshman named Dagys, the best shoemaker in the colonies, settled there; Westfield, Massachusetts, which now manufactures about two-thirds of the whips of the country, owes its importance, according to Professor Malcolm Keir, to the fact that an incensed farmer cut and bound with twine the willows of his hedge and sold them rather than let his neighbors steal them. Localization is sometimes due to monopoly, as of a patent; for instance, oil refining and sugar refining are done at a few strategic

points, and the manufacture of shoe machinery is largely confined to Beverly, Massachusetts. Localization may also result from family control; for example, cotton manufacturing on the Merrimac River is intimately associated with the Lawrences, and the brass industry of western Connecticut is due in large part to the Scoville, Benedict, and Burnham families. Shop association has aided materially in the localization of industry. Every cotton mill started, 1790-1814, so it is said, was manned by those who had received training under Samuel Slater at Pawtucket, Rhode Island. Trenton and Gloversville have become the seats of the pottery and men's gloves industry respectively, largely on account of shop association.

Division of manufacture leads also to localization. Many Lynn and Brockton plants confine themselves solely to the manufacture of particular parts as heels, counters, box toes, or soles, while Detroit, the greatest automobile center, leads in automobile accessories, and Philadelphia, an important textile center, has a larger number of dyehouses than any other city. Localization also attracts plants which use waste products. Near Gary, Indiana, the seat of the largest steel mill in the country, is a great cement plant which utilizes the slag, and at Gloucester, an important fishing port, heads and tails of cleaned fish are hauled by the drayload to a large factory which turns them into glue, and mucilage. Again, the development of industries which use male workers almost exclusively may lead to the development of near-by complementary industries which depend upon female labor. For instance, the silk industry at Allentown, a noted coal town in the Lehigh Valley, and Scranton, the best known anthracite town, both in Pennsylvania, is rapidly gaining on that manufacture at Paterson, New Jersey. Such industries are frequently called "parasitic" because they use a labor force collected by other industries and practically going to waste. Prestige is also a factor in localization, "Brockton" being supposed to give quality to a shoe, "New Bedford" to cotton, etc.

Home work in wearing apparel, jewelry, silverware,

paper articles, sporting goods, and celluloid ware aids in localization, for one-half of the people employed in these industries in some states never work in factories. Freight rates may be lower when many concerns purchase the same kind of raw materials and it is also easier to sell wares when a market is established, for buyers come to such a place. Again, a concentrated market may be established; for instance, Boston is a warehouse for the near-by shoe industry. Employees, to be sure, tend to remain in the district of localization, for they can probably find work with another employer if they lose their positions. Although there are certain disadvantages to localization of industry, such as distance from raw materials or markets, labor union strength, increase in plants, suffering in periods of depression, and the formation of a labor class, the balance of advantage is with localization, for, from the manufacturer's viewpoint, good labor can be secured, sales can be readily made, and purchases can be handled well. From the worker's viewpoint jobs are secure and there is opportunity for organization. New plants branch out from old ones, new establishments are founded, and small factories are developed to care for waste products. Localization is thus, as Professor Keir points out, "a persistent feature of industry."

Examples of Localization.—Apparently the highest degree of localization came in the period 1889-1899, and, since then, there has been a tendency to wider diversification. Localization may be shown by the percentage of the total output of the country furnished by a given state or city and by the percentage of all wage-earners in a given locality employed in the specified industry. In 1899, nine manufactures had more than three-fifths of their total value supplied by one state and more than three times that number had over one-fourth of their total value supplied by one state.

A study of localization statistics shows that in addition to monopolizing collars and cuffs and leather goods and mittens, New York had about three-eighths of the hosiery and knit goods, over a third of the salt, and more than a

EXAMPLES OF STATE LOCALIZATION, 1899

Article	*State*	*Percentage*
Collars and cuffs	New York	99.6
Plated and britannia ware	Connecticut	75.7
Oyster canning and preserving	Maryland	65.9
Leather goods and mittens	New York	64.9
Clocks	Connecticut	63.5
Coke	Pennsylvania	62.6
Safes and vaults	Ohio	61.3
Whips	Massachusetts	60.4
Vinous liquors	California	60.1

fifth of the wood pulp. Connecticut, besides producing more than three-fifths of the plated and britannia ware and clocks, contributed over half of the brassware, about half of the corsets, and over a fourth of the fur hats. Pennsylvania, in addition to furnishing over three-fifths of the coke, produced over half of the iron and steel, nearly half of the carpets and rugs other than rag, almost two-fifths of the glass, and over a fourth of the tanned, curried, and finished leather. Ohio had over three-fifths of the safe and vault values and more than a fourth of the pottery, terra cotta, and fire clay products. Massachusetts turned out three-fifths of the value in whips, about three-sevenths of the factory boot and shoe product, and, approximately, one-third of the cotton goods. Illinois had over two-fifths of the product in both agricultural implements and slaughtering and meat packing and nearly as large a proportion of distilled liquors. Rhode Island had about three-eighths of the silverware and nearly three-tenths of the jewelry. Occasionally a state ranked high in only one product. Thus, Maryland had two-thirds of the products of oyster canning and preserving, California three-fifths of the vinous liquor product, Georgia about two-fifths of the turpentine and rosin, Texas two-fifths of the cotton ginning, and New Jersey three-eighths of the silk and silk goods.

Within the states just mentioned are cities which contributed a very high percentage of the total value produced

in the United States, eight furnishing well over a third, as indicated in the following table:

EXAMPLES OF CITY LOCALIZATION, 1899

Article	*City*	*Percentage*
Collars and cuffs	Troy	85.3
Oyster canning and preserving	Baltimore	64.4
Coke	Connellsville	48.1
Brassware	Waterbury	47.8
Carpets and rugs other than rag	Philadelphia	45.6
Gloves	Gloversville	38.8
Silverware	Providence	36.3
Slaughtering and meat packing, wholesale	Chicago	35.6

Again, many cities had a very high percentage of their workers employed in a given industry, in many cases running well over three-fourths, as evidenced by some examples in the following table:

CITY LOCALIZATION BY WAGE-EARNERS, 1899

Industry	*City*	*Percentage of Workers*
Slaughtering and meat packing, wholesale	South Omaha	89.9
Iron and steel	McKeesport	88.8
Pottery, terra cotta, and fire clay products	East Liverpool	87.4
Fur hats	Bethel, Conn.	86.0
Glass	Tarentum, Pa.	81.1
Cotton goods	Fall River	80.4
Shoes	Brockton	77.4

Attention will now be called to a few examples which seem to justify the statement made in a previous paragraph, namely, that industries seem to be spreading over a wider field. New York's percentage of collars and cuffs fell to 92.3 in 1909, but rose to 97.7 in 1919. Pennsylvania's percentage of coke dropped to 37.8 in 1919. Connecticut's percentage of plated and britannia ware was

only 54.4 in 1919 and Maryland's proportion of oyster canning and preserving fell to 21.5. Similar decreases were apparent in the cities; to note three examples, Chicago's percentage of slaughtering and meat packing stood at 25.5, Philadelphia's percentage of carpets and rugs other than rag at 34.9, and Providence's proportion of silver smithing and silverware at 23.4.

In proportion of workers employed in a given industry as compared to all industries, there was no marked change towards wider distribution, though that seems to be the general tendency there as indicated by census reports.

Migration of Industries.—The forces which tend to localization of industry also have a bearing upon the migration of industries. With the movement of agriculture from the East to the West, New York and Ohio declined in importance with regard to the value of agricultural implements, while Illinois increased in a marked way. In 1899 the latter had 41.5 per cent of the total values and in 1919 about the same, or 42.1 per cent of all values. In 1859, New York, Ohio, Pennsylvania, Illinois, Virginia, and Indiana were the leaders in flour and grist mill products, but in 1899 Minnesota had a product worth more than that of the next two states; in 1919, her proportion of the whole was 18.6 per cent. Slaughtering and meat-packing is still another industry which shows the westward migration. The industry really began at Cincinnati in 1818 and that city held first place until passed by Chicago in 1861. In 1899, Illinois had 40.1 per cent of the product, but only 30.2 in 1919. Illinois, Kansas, Nebraska, New York, and Missouri, ranking in the order named, contributed 59.3 per cent of the total product, whereas in 1899, Illinois, Kansas, Nebraska, Indiana, and Missouri, the leading central states, contributed 73.5 per cent of the total. Although Massachusetts still leads in the manufacture of cotton goods, as she has done for eighty years, her proportion has fallen, while that of the Carolinas and Georgia has steadily advanced from little more than six per cent in 1879 to nearly thirty-five in 1919. These migrations are only a few of those which might be noted, but the gen-

eral movement has already been sufficiently indicated in the statistics relative to the declining percentages of all manufactures and the gains for the other parts of the country.

Effects and Tendencies in Manufacturing.—The effects and tendencies in manufacturing have already been partially described in this and other chapters and only the briefest mention will be made here. The shift from rural to urban population, the foreign-born in our cities, the tendency to radicalism, the change from thrift to thriftlessness, are all due in part at least to the development of manufactures. When the Constitution was drawn up in 1787, there were only seven cities in the United States with a population of more than eight thousand—Philadelphia, New York, Boston, Charleston, Baltimore, Salem, and Newport—but in 1920 51.4 per cent of the people lived in 2,787 cities of over twenty-five hundred. In 1920 about one-fourth of our states had over three-fifths of their population urban, most of them being manufacturing states.

The complexity of the city problem due in part to manufactures is made even more difficult by the presence of large numbers of foreign-born and negroes already mentioned in the chapters on population and immigration. Here we may merely state that in 1910 in Fall River, Lowell, New York, Paterson, Boston, Chicago, Bridgeport, Cleveland, Providence, and Detroit the percentage of foreign-born ranged from forty-two down to thirty-three, though slight decreases, as already noted in another chapter, were registered in many in the next ten years. About seven-tenths of all the foreign-born are found in the regions which specialize in manufactures. In recent years, as already pointed out, the negroes have flocked to our cities with the hope of obtaining work. A high percentage of the foreign-born and negroes is illiterate, and school and library facilities are poor.

Farmers in 1790 numbered nine out of ten men in our population but in 1920 not over three. Because farmers as capitalists tend to resist social upheavals, the growth of manufactures has tended to make us more radical. Wage-

earners have organized for reform and have worked, usually successfully, for abolition of imprisonment for debt, for free public schools, for free textbooks, for shorter hours, for improved working conditions, for social insurance, for public employment offices, for minimum wage laws, and other reforms. Each step has been resisted as radical, but the tendency is to accept them one by one. Professor Malcolm Keir sees in manufactures a decided stimulus to extravagance, for while men live in an age of underproduction they husband their resources carefully, but when products are cheap and made available at all times by good transportation facilities they tend to squander them recklessly.

But manufactures have done more than shift the population from the country to the town, alter the racial purity, create the social problems of a large foreign and negro population, and upset "apparently fixed traits of character." They have directly stimulated other industries such as farming, mining, lumbering, and railroading. Factories obtain three-fourths of their raw materials from the farms, and their workers consume large amounts of foodstuffs. Without the factory demands the mines and forests would close down because of the inadequacy of the foreign demand. Again, much of the traffic of the railroads is due to the carriage of raw materials from farm, mine, forest and port to the factories, and the carriage of the manufactured products to the home market or port for shipment to foreign cities. Without the factories there would be less need of the railroads, though imports and other products would have to be carried, and says Professor Keir:

> Especially would there be far less inter-city freight movement because there would be fewer cities. The growth of manufacturing, therefore, has promoted the progress of all other industries and these in turn have enhanced the importance of manufacturing itself.[6]

[6] *Manufacturing Industries in America* [Ronalds, New York, 1920] 318.

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CHAPTER VIII

THE TARIFF POLICY

Definitions of Tariff.—In the discussion of the tariff we should keep in mind that any tariff operates as an encouragement to home manufacturers, for it gives them a margin of profit in the competition with foreign products additional to that given by the cost of transportation. A tariff, of course, is simply a list of taxable commodities on which duties are charged. Since the adoption of the Constitution in 1789, our tariffs have been on imports, though in the colonial period, they were levied on exports as well.

It is customary to distinguish between protective and revenue tariffs, though in the popular sense the former are referred to as high tariffs and the latter as low ones. The object of a protective tariff is to levy duties sufficiently high to restrict or prohibit the importation of the foreign goods whose manufacture here is desired; a tariff for revenue only is intended to raise money without reference to the effect on domestic manufactures. Motives, to be sure, are blended, for a protective tariff unless absolutely prohibitive will yield revenue. So, too, a tariff for revenue only will give some protection and on some items designedly so. Duties are normally of three kinds—ad valorem, specific, and compound. Ad valorem comes from the Latin words meaning according to value and ad valorem duties are consequently per cent duties on value, as twenty-five or thirty per cent on the dollar. Specific duties are taxes of so many cents or dollars for each unit of measure, such as three cents a pound, twenty cents a gallon, or fifty dollars a ton. Compound duties, as the name indicates, are a combination of the ad valorem and specific. In general, the Federalists, Whigs, and Republicans have stood

for high tariffs and often specific duties, and the Democrats have favored low tariffs and ad valorem duties.

Colonial Tariffs.—During the colonial period tariff duties, hastily prepared, fell under four main classifications, according to Professor William Hill: tonnage or ship duties, export duties on tobacco and other products, import duties on slaves, and regular tariff schedules with the emphasis on wines and liquors. Perhaps the most general duty was the tonnage, castle, or powder, so called because the owner was at first required to pay an amount of powder and shot dependent upon the ship's burden. These payments were later changed to cash. As in the case of most of the other duties, the object of the tonnage duty was primarily revenue for specific national defense, but because home vessels were often exempt from payment the duty gave some protection to local shipping.

Export duties were generally levied for revenue, but occasionally to husband the supply of raw materials and thus promote domestic manufactures. Virginia levied export duties upon such products as tobacco, skins, furs, wool, and iron; Connecticut and New Jersey upon staves and various forest products; Canada upon furs and skins; South Carolina upon the same, leather, Indian slaves, and timber; and Maryland upon tobacco consistently and at various times upon furs, skins, beef, pork, bacon, iron, flour, wheat, and all European goods. The tobacco tax was naturally confined almost entirely to the southern colonies. In Maryland it was devoted to the proprietor for the support of the government and also for needs of a general character; in Virginia, where the duties usually varied from two to ten shillings a hogshead of five hundred pounds, it was one of the most constant and important items of the revenue. Even though the import tax on slaves was levied in Pennsylvania, New York, and Massachusetts, and possibly in other colonies outside of the South, its proceeds were small because the slaves were few and rates were low. The tax found its chief field of operation in the South.

In the use of a general tariff schedule South Carolina moved the farthest, for more articles were taxed and rates

were higher than elsewhere. In 1703 specific duties were levied upon liquors, provisions, and slaves, and an ad valorem rate was placed upon all remaining commodities. Up to 1740, ad valorem duties usually ranged from one to five per cent, but continual extensions took place in specific duties. In Massachusetts tariff acts were briefer and duties lower than in South Carolina, but legislation was systematic and laws were renewed regularly from 1692 until 1774, though English goods were not subject to duties after 1719. Specific duties were levied on wine, rum, tobacco, sugar, molasses, and dye goods, and ad valorem rates of about one-half of one per cent were imposed on all other goods in 1692, of nearly one per cent in 1731, and of about three and two-thirds from 1739 to 1774. New York, under the Dutch rule, levied comparatively heavy import duties, but elsewhere duties imposed were rather light. For instance, Connecticut, Pennsylvania, Maryland, and North Carolina taxed few articles other than liquors, and Maryland levied duties, according to Professor D. R. Dewey, "only for temporary purposes or for special objects other than as a source of constant revenue."

Tariff Conditions, 1776-1789.—During the period of the Revolution and Confederation the states passed numerous tariff laws, but usually with the idea of retaliation and revenue rather than protection, though the latter motive figured with retaliation in the New England and Middle States. The Southern States passed their laws almost entirely for revenue. Discriminating tonnage duties and import duties were levied upon British imports by most of the states, but because the duties ranged from five to one hundred per cent, and because, moreover, some states continued to admit goods duty free, British products poured in through the cheapest or free ports. Between the years 1780 and 1788, according to Professor E. L. Bogart, Pennsylvania passed fifteen tariff acts, Virginia twelve, Massachusetts, New York, and Maryland seven each, Connecticut six, and the remaining states a lesser number.

Efforts to improve the taxing powers of the national government in this period failed, as noted in a subsequent

chapter, because the states were jealous of their tariff-making powers conferred by the Articles of Confederation.

But when the Constitution was adopted in 1789, states were prohibited from levying import or export duties, without the consent of Congress, "except what may be absolutely necessary, for executing its inspection laws," and export taxes were prohibited as were state duties on "vessels bound to or from one State." The most important provision, however, reads:

> The Congress shall have power to lay and collect taxes, duties, imposts, and excises, to pay the debts and provide for the common defence and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States.[1]

Demand for Tariff.—One of the reasons for the state tariff acts of the middle eighties was the influx of British commodities which caused the prostration of some of the American manufactures. When the national government received adequate powers over customs duties, it was flooded with petition after petition for protection, one of which, fairly typical and presented by the Baltimore citizens, follows:

> That, since the close of the late war, and the completion of the Revolution, they have observed with serious regret the manufacturing and the trading interests of the country rapidly declining, and the attempts of the state Legislatures to remedy the evil failing of their object; that, in the present melancholy state of our country, the number of poor increasing for want of employment, foreign debts accumulating, houses and lands depreciating in value, and trade and manufactures languishing and expiring, they look up to the supreme Legislature of the United States as the guardians of the whole empire, and from their united wisdom and patriotism, and ardent love of their country, expect to derive that aid and assistance which alone can dissipate their just apprehensions, and animate them with hopes of success in future, by imposing on all foreign articles, which can be made in America, such duties as will give a just and decided prefer-

[1] Article 1, Sect. 8, Par. 1.

ence to their labors; discountenancing that trade which tends so materially to injure them and impoverish their country; measures which, in their consequences, may also contribute to the discharge of the national debt and the due support of Government: that they have annexed a list of such articles as are or can be manufactured amongst them, and humbly trust in the wisdom of the Legislature to grant them, in common with the other mechanics and manufacturers of the United States, that relief which may appear proper.[2]

This petition and similar ones probably influenced the wording of the Act of 1789, whose preamble reads in part: "Whereas it is necessary for the support of Government, for the discharge of the debt of the United States, and the encouragement and protection of manufactures." Although the revenue motive, as in all tariffs prior to 1816, outweighed the protective note, the insistence on the latter and conflicting interests are apparent from the debates. Although some protection was given on practically all articles where a conflict appeared, duties were low. Specific duties were imposed on more than thirty commodities, and ad valorem rates of seven and a half to fifteen per cent were levied on some specified articles and five per cent on all others. All duties reduced to an ad valorem basis averaged about eight and a half per cent.

Tariffs, 1790-1815.—That Congress was not ready to embark upon a protective policy seems evident from the fact that the first act was limited to seven years. The acts of 1790 and 1791 were to be continued until their special purposes had been accomplished and the Act of 1792, which increased the five per cent ad valorem list to seven and a half per cent, was operative for two years only, though later extended to 1797. To provide for the expenses of the Barbary wars, 1801-1805, Congress in 1804 authorized the increase of all ad valorem duties by the addition of two and a half per cent and also the levy of an extra ten per cent duty upon goods imported in foreign ships. Shortly after war was declared on England in 1812, customs duties were doubled, but this meant little or no revenue, for a

[2] *Annals of Congress*, Vol. I, 120, 121.

large part of our trade was with the country against which we had declared war.

Tariff of 1816.—Sentiment during the war shifted in favor of protection and this feeling steadily mounted after the war because of the big influx of English goods. Deprived in large part of the American market during embargo, non-intercourse, and war, English merchants had stored their surplus products and as soon as peace was signed, they rushed cargoes to the United States, ready, if necessary, to sell the goods at any price in order to stifle the rising American manufactures, after which they could elevate the price again. American aristocrats were, moreover, anxious to buy the superior English goods. One cargo of earthen ware at Philadelphia sold at an advance of 308 per cent, and another cargo from Liverpool sold at an increase of 500 per cent. Hardware, groceries, earthenware, and dry goods flooded the country and in one of the early weeks receipts from auction sales in New York, Philadelphia, and Boston amounted to $1,300,000. In New York City dues paid at the custom house amounted to about $3,960,000 for April, May, and June. By the early fall of 1815 American merchants, especially cotton and woolen, were well-nigh prostrated. The extent of the competition may be realized partially by noting that imports rose from about $13,000,000 in 1814 to $147,000,000 in 1816, and customs duties in 1816 yielded $36,000,000 in place of $13,000,000, as Dallas had predicted.

Manufacturers naturally continued to petition Congress for protection. They pointed out that they had patriotically risked their capital when the country needed their products and that now when they were threatened with destruction, the country should come to their aid. President Madison in his annual message, December, 1815, advocated protection, especially for those articles which would make the country independent in time of war, and Secretary Dallas likewise recommended protection in an elaborate report of February 11, 1816, in which he favored high protective duties for those articles produced here to an extent sufficient to meet home needs, more moderate protection for

those not produced in sufficient abundance to meet home needs, and the subjection of articles not manufactured here to revenue considerations only. A tariff bill was introduced March 12, 1816, and enacted April 27. Because the distress, especially in the textiles, was unquestioned, the measure was passed. The House vote was 88 to 54; only one section—the South and Southwest—opposed, 34 to 23. South Carolina, so strong against the tariff fifteen years later, favored this measure 4 to 3.

The protection afforded by the tariff was not so high as recommended by Dallas, and neither were the duties so high as some in force from 1812 to 1816, but because protection was the openly avowed motive, the act has rightly been called the first protective tariff. Obviously it is impossible to note all of the duties in this or any other tariff, but the more important ones will be considered. Because the textiles were so seriously threatened, a duty of twenty-five per cent effective to June 30, 1819, and after that date of twenty per cent was placed on cotton and woolen goods. Even greater protection was given on cotton cloths, for by the principle of minimum valuation, cotton goods which cost less than a quarter a square yard were deemed to have cost that sum and were taxed accordingly. Coarse, low-priced cotton fabrics from the East Indies were excluded. The tariff levied thirty-five per cent ad valorem duties on linen, thirty per cent on rolled or hammered iron, leather, cabinet ware, carriages, hats, and writing paper, and twenty per cent on glass and earthenware. Specific duties were also levied on various commodities.

Tariff of 1818.—The movement in tariff levels was steadily upward until 1833, as clamor for protection continued. The iron producers, who suffered from the competition of English pig and bar iron produced at a lower cost because of the general use of coke and also from the charcoal iron of Sweden and Russia where wood was abundant and labor cheap, had not been given protection comparable with that of the textiles, especially cotton; hence iron duties were increased. The duty on pig iron in 1818 was placed at fifty cents a hundredweight, which, accord-

ing to Professor F. W. Taussig, was the first specific duty on pig iron. The duty on hammered bar iron was increased from forty-five cents to seventy-five a hundredweight. Higher duties were likewise levied on castings, anchors, nails, and spikes. Protection was further recognized by postponing the reductions on cotton and woolen goods until 1826.

Tariff of 1824.—Because the Panic of 1819 caused considerable distress and led to deficits in the government revenues, Secretary Crawford recommended increased protection in 1819. Manufacturers urged higher duties because of the fall of prices after the resumption of specie payment and friends of the tariff argued that increased duties would attract foreign labor and capital here and thus augment our resources. Although the administration favored the increase of duties, the 1820 attempt failed by one vote in the Senate. Recommendations for higher duties continued and increased stimulus came from the low price of agricultural products. In 1824 corn at Cincinnati sold as low as eight cents a bushel, wheat at a quarter, and flour at $1.25 a barrel. Henry Clay urged the protection of agricultural interests. He argued that the United States should shut out English manufactured goods in order to strengthen the buying power of American manufacturers, for the English corn laws restricted the importation of American grain. With protective duties American manufacturers could buy more grain and thus the markets of the farmers would be broadened and prices probably increased.

Opposition to the proposed increase of 1824 developed. The two most famous speeches were those by Daniel Webster of Massachusetts, who represented the New England mercantile interests, and George McDuffie of South Carolina, exponent of southern views. Webster believed that the tariff would injure shipping by decreasing freights and by increasing the cost of construction. James McDuffie condemned the measure as a sacrifice of the laboring class and small farmers to the capitalists. Although McDuffie urged moderation as did Senator Hayne of South Carolina,

John Randolph, the irrepressible, threatened forcible resistance and ridiculed the Constitution.[3]

The House vote was 105 to 102 in favor of the measure. The Middle States, West, and Southwest were in favor of the bill; New England, except Rhode Island and Connecticut, and the South opposed it. Iron, wool, hemp, glass, and lead seemed to be united against commerce. Pennsylvania desired more protection for iron, Ohio and the Middle States were anxious for higher duties on wool, and Kentucky wanted protection from the water-rotted hemp of Russia. The most important changes were in the increased duties on iron, lead, wool, hemp, cotton-bagging, and other articles whose protection was ardently desired by the Western and Middle States. Duties on cotton and woolen goods were increased from 25 to 33⅓ per cent effective in 1826, but the duty on wool was almost entirely neutralized by increasing the duty on raw wool from 15 to 30 per cent. The minimum valuation of cotton was increased from 25 to 30 per cent and the minimum duties from 6.25 to 7.5 cents. Although the duty on rolled bar iron remained at $1.50 a hundredweight as fixed in 1816, that on hammered bar rose to 90 cents as compared with 75 in 1818 and 45 in 1816. Hemp manufactures were given a protection of 25 per cent. Iron and hemp duties, to be sure, increased the burdens of New England shipping.

Tariff of 1828.—Because Clay, Adams, Crawford, and Jackson, the leading presidential candidates in 1824, were all Protectionists, that tariff scarcely entered politics, but although the demands of the woolen interests were an important factor in the Act of 1828, the desire, as John Randolph said, "to manufacture a president of the United States," was even more important. In 1828 Clay, Adams, and Jackson were the leading candidates for the presidency, as they had been in 1824. The first two were strong Protectionists, and in 1824 even Jackson had favored "adequate and fair protection." The supporters of Jackson

[3] See Taussig, F. W. *State Papers and Speeches on the Tariff* [Harvard Press, Cambridge, 1922] for the lengthy speeches of Clay and Webster.

desired to win votes in the North and to hold them in the South, and so they organized the House committee on manufactures in such a way that the friends of Van Buren, who headed Jackson's campaign in the Middle and Western States, would have control. The intention was to give high duties on manufactured goods, but to offset them by high rates on raw materials. Eastern manufacturing interests were expected to join with the South and to defeat the measure. Adams and Clay, who were expected to support the measure, would lose in prestige, but Jackson, who was to keep still, would not be committed and his friends in the North would be free to support the bill and in the South to oppose it.

Even Webster favored this measure, for he had been converted to protection when he found that the majority of his constituents had protective leanings. Senators Benton of Missouri and Johnson of Kentucky, as did Van Buren, Buchanan, and Silas Wright, northern Democrats, favored it. Webster's course was probably decisive, for the Senate vote was 26 to 21 and the House 105 to 94. The Kentucky delegation, Clay's state, voted unanimously for the measure and the Tennessee delegation, Jackson's state, was just as solid against it.

The Act of 1828, unpopular in all sections of the country, was variously known as the "Tariff of Abominations," the "Black Tariff," and the "Woollen Tariff." Inasmuch as the measure was in large part a response to the demands of the woolen interests, the protection accorded them will be noticed first. Raw wool was subjected to an ad valorem duty of 40 per cent and a specific duty of 4 cents a pound. In general, woolen cloths paid an ad valorem duty of 45 per cent, 40 the first year. Although the Harrisburg Convention had favored requiring all woolen goods which cost from 40 cents to $2.50 a yard to pay duties on $2.50, the act did not go quite that far. All cloths costing 50 cents or less were dutied at that sum, from 51 cents to 100 at the higher sum, from $1.01 to $2.50 at $2.50, from $2.51 to $4.00 at $4.00, and all cloths worth more than $4.00 were dutied at 50 per cent ad valorem. This system, it will be

noted, gave exorbitant protection; for instance, if goods cost $1.05 a yard the honest importer would have to pay a duty of $1.125, more than a hundred per cent protection. A dishonest importer would give values sufficiently low to get in the next class and could consequently undersell in the markets the honest business men. The duty on molasses was raised from five cents a gallon to ten and the drawback was refused. Sail duck was charged nine cents a yard with the provision for a half cent increase each year until the duty reached 12.5 cents; these duties meant an increase from the 15 per cent allowed in 1824 to 40 or 50 per cent. The act denied a drawback on any amount under fifty bolts exported at any one time in one vessel. The opposition to the New England interests was further revealed by the imposition of heavy duties on hemp and flax. The minimum valuation on cotton goods was raised from 30 to 35 cents and the minimum duty was consequently increased from 7.5 to 8.75 cents. In spite of the continued fall in prices which thus increased the protection afforded, specific duties on all kinds of iron were raised. The duty on pig iron was advanced from 56 to 62.5 cents a hundredweight, that on hammered bar from 90 cents to $1.12, and that on rolled bar from $30 to $37 a ton.

Southern Opposition.—The South was furious at the passage of the Tariff of 1828 and threatening toasts and spasmodic criticism became more violent. Flags were flown at half-mast in Charleston, as also in New York, and southern orators demanded a boycott against northern merchants and the resignation of southern members of Congress. Senator Hayne of South Carolina wrote Jackson that ninety-five out of every hundred men in his state believed "that the protective tariff would ruin the South and destroy the Union." Fiery John Randolph declared: "We are insulted, proscribed, and put to the ban;" if "we do not act, we are bastard sons of the fathers who achieved the Revolution." The most famous attack on the tariff was that by Vice-President Calhoun known as the *Exposition and Protest*. In this document presented to the South Carolina legislature in 1828 Calhoun, not definitely known

as the author until several years later, urged that the Act of 1828 was unconstitutional, for it was a protective tariff when Congress had power to levy duties for revenue only, that it was sectional, for the South with one-third of the House votes was compelled to pay two-thirds of the custom's duties, and that, because the government was called into being by the states, three-fourths of them could declare any act null and void. Calhoun believed that sentiment could best be determined by a convention; South Carolina, Georgia, Mississippi, and Virginia supported the doctrine. The South waited for action until Jackson's inauguration, but it received scant comfort from him, though in 1830 the molasses duty was reduced from ten cents a gallon to five, the drawback on rum was restored, and duties on salt, tea, coffee, and cocoa were reduced.

Sentiment continued to grow more bitter. Space will not permit emphasis of the Webster-Hayne debate over Foote's resolution stopping temporarily the sale of the public lands, or Jackson's toast at Jefferson's birthday dinner, April 13, 1830, "Our federal Union—it *must* be preserved," and Calhoun's immediate response, "Liberty dearer than Union." Jackson's second annual message, December, 1830, admitted that though some duties were "too high on some of the comforts of life" Congress, nevertheless, had the right to levy a protective tariff and should use that right. Friends of free trade held a meeting in New York and advocates of protection in Philadelphia; both sides appealed to the country and both sent memorials to Congress. McDuffie presented a report representing southern views; it attacked specific duties because they exacted the same money duty on articles of different values and because with the lowering of manufacturing costs the per cent rate was increased. The report insisted, as the South had long argued, that imported goods were practically paid for by the exporter because exports pay for imports and that, consequently, because cotton, rice, and tobacco contributed about two-thirds of the export values the burden of the tariff rested largely on the South. Many Southerners believed also that the North would profit from the enhanced

prices northern manufacturers would obtain for their products. McDuffie urged that all duties not on the free list or in excess of twelve and a half per cent be reduced to that sum. The administration measure, fathered by McLane, provided for varying reductions, but for an average from forty-four to twenty-seven. Neither measure, however, could command a following sufficient for passage, and so John Quincy Adams reluctantly yielded to pressure and prepared a bill which became the Tariff of 1832.

Tariff of 1832.—This act swept away the system of minimum valuations, which had led to under-valuations, and placed a duty of fifty per cent on woolen goods. The hemp duty was lowered from sixty dollars a ton to forty, and flax which had been subject to a similar duty was placed upon the free list. Duties on pig and bar iron were reduced to the rates of 1824. The duty on wool was little changed, for it remained a compound duty of four cents a pound and forty per cent ad valorem. The special grievance, nevertheless, was removed, for wool, which cost less than eight cents a pound, entered free of duty. Professor F. W. Taussig declares that duties were in the main restored to the level of 1824, but as pointed out by Professor D. R. Dewey, the duties on woolens were raised and woolen yarn was taxed for the first time. The House vote was 132 to 65 with New England and the South evenly divided and the other sections in favor of it.

Nullification.—The Tariff of 1832, however, did not satisfy the South where nullification sentiment was growing stronger. The South Carolina legislature followed Governor Hamilton's recommendation on October 22, 1832, and by large majorities favored the calling of a convention. That body on November 24, by a vote of 136 to 26 adopted an ordinance "to nullify certain acts of Congress of the United States, purporting to be laws, laying duties and imposts on the importation of foreign commodities." The legislature shortly afterwards passed a replevin act for the recovery of goods seized because of non-payment of duties, authorized the seizure of personal estate to double the value of goods in case of non-return, and gave persons arrested

or imprisoned on Federal court charges the writ of habeas corpus and right to damages. Other measures authorized the use of militia and volunteers in case the state should be invaded, the purchase of arms and ammunition, and the adoption of a state oath repugnant to union men. Jackson's message of December 4 urged tariff readjustment to the end that protection be no more than "What may be necessary to counteract the regulations of foreign nations and to secure a supply of those articles of manufacture essential to the national independence and safety in time of war."[4] Five days later he wrote Poinsett, collector of customs at Charleston, that within forty days from the date of his orders he would have forty thousand men in South Carolina to put down resistance and to enforce the law. On the next day in a proclamation to the people of South Carolina, Jackson denied the power of a state to annul a law, asserted that the motive of Congress could not be questioned, said that any tax would operate unequally, declared that no charge of improper expenditure could be brought, condemned the compact theory of government, and warned the people to consider carefully the danger they were running and "to stop before resort must be had to force."

Compromise.—South Carolina kept a stiff upper lip for a while, adopted resolutions, issued a counter proclamation, and appealed to her sister states who, in the time of immediate need, refused support. The forces of compromise, however, were at work. The Verplanck Bill proposed a reduction of tariff duties within two years to about half the prevailing rates, though a force bill which authorized the president, if necessary, to change custom house locations and use the army and navy to collect duties, was introduced. A public meeting at Charleston voted to suspend the action of nullification, set for February 1, 1833, until the decision of Congress could be known. Clay, possibly fearing the total loss of protection, desirous of saving as much as possible, and averse to seeing Jackson exercise

[4] Richardson, J. D. *Messages and Papers* [Government Printing Office, Washington, 1896-1899] Vol. II, 598.

military power, introduced a measure which provided that all duties in excess of twenty per cent should be reduced to that level by July 1, 1842. One tenth of the excess was to be taken off by January 1, 1834, a second tenth two years later, a third tenth two years afterward, and a fourth tenth by January 1, 1840, one-half of the remaining excess, or three-tenths, January 1, 1842, and the other three-tenths, July 1, 1842.[5]

The Senate passed the measure by a vote of 29 to 16 and the House by a vote of 119 to 85. In general, New England and the Middle States opposed the measure: the South, West, and Southwest supported it. The Force Bill was passed in the Senate 32 to 1 and in the House 149 to 47. Jackson signed both bills March 2. The South Carolina Convention rescinded the Nullification Ordinance on March 15 by a vote of 153 to 4, but nullified the Force Bill by a vote of 132 to 19 three days later.

Tariff of 1842.—Although a temporary break came, 1842-1846, the South had won in its fight for a low tariff and remained victor until the Civil War forced the return of higher duties. We are little concerned with the preliminaries of the Tariff of 1842, with the desire of the Whigs to turn over the proceeds of public land sales to the states in order that they might argue with some show of plausibility that higher tariff duties were necessary for government revenues, and with the numerous close votes. Here we shall merely state that the act abandoned home valuation given by the previous act, required cash payment of duties, and discriminated against goods brought in other than American ships and from remote countries unless they were protected by treaty. For instance, they were subject to an extra duty of ten per cent which was increased to twenty if they came from ports east of the Cape of Good Hope. Duties of 5 per cent were levied on wool worth less than seven cents a pound and of 3 cents and 30 per cent on other wool. Duties on woolen goods were placed at 40 per cent and on cotton at 30. The "minimum" was made 20 cents a square yard for gray goods and 30 for

[5] See *Congressional Debates*, Vol. IX, Part 1, 733.

bleached, dyed, and printed goods. Railroad iron was subjected to specific duties of $25 a ton, pig iron to $9, rolled or hammered iron to 2.5 cents a pound, and cut nails to 3. These duties, according to Professor D. R. Dewey, were equivalent to ad valorem rates of 77, 72, 51, and 43. Specific duties, with high ad valorem equivalents, were levied on window glass, refined sugar, molasses, salt, and cotton bagging. Glass duties were raised, but those on leather, boots and shoes, and paper were reduced. The free list remained about the same as before. The level, according to Professor Dewey, gradually rose to that of 1832.

Walker Tariff.—When prosperity returned to the country about 1844, following the depression of 1837-1842, agitation began for reduction. Robert J. Walker, Polk's secretary of the treasury, believed in a low tariff which would bring no more revenue than was needed, no duty higher than "the lowest rate which" would "yield the largest amount of revenue," discrimination below that rate or transference to the free list, maximum duties on luxuries, abolition of minimum and specific duties, and the imposition of ad valorem duties "to operate as equally as possible throughout the Union." Walker drafted a bill whose recommendations in general were followed. The House vote was 114 to 93 with New England and the Middle States in opposition. The tariff contained less than five thousand words, but aside from its free trade basis, its most marked characteristic was its adoption of eight schedules under which all goods were dutied. Schedule A included such things as brandy, spirits, etc., and paid a duty of 100 per cent; Schedule B included such items as manufacturing tobacco, cigars, snuff, spices, and preserved fruits and meats which paid duties of 40 per cent; Schedules C, D, E, and F contained the great mass of commercial products and bore duties of 30, 25, 20, and 15 per cent respectively; Schedule G, with a rate of 10 per cent, numbered among other things, books, building stone, diamonds, and watches; Schedule H, carrying a rate of 5 per cent, contained articles in a low state of manufacture and used in existing industries; and

Schedule I, or the free list, contained coffee and tea, copper ore, and a few other products.

Tariff of 1857.—Prosperity continued and the need of tariff reduction appeared unquestioned; hence, with little opposition, save from the Middle States and the West and Northwest, the Tariff of 1857 was enacted. The Tariff of 1846 was used as a basis. All articles in Schedules A and B were reduced to 30 per cent, in Schedule C to 24, in Schedule D to 19, in Schedule E to 15, in Schedule F to 12, in Schedule G to 8, in Schedule H to 4, and on articles not especially provided for from 20 to 15. Some exceptions were naturally made; thus, many drugs and dry stuffs, articles used in chemical arts, raw silk, tin, and wood were placed upon the free list or in lower rate schedules, and cotton manufactures were favored by leaving the cotton duties nearly as high as those levied by the Tariff of 1846. The average of duties for the next four years ranged from 20.0 per cent to 18.1.

Higher Tariffs, 1861-1890.—Scarcely had this tariff gone into effect before a panic, accompanied by treasury deficits, swept over the land. Bills for rate increases were introduced, but not until secession had removed many Southerners did the Morrill Bill pass the Senate and become law, March 2, 1861. The measure was a moderate one. Specific duties were generally restored, but when ad valorem rates were retained, the usual return was to the rates of 1846. With the withdrawal of the South and the war needs tariff duties were increased, as a partial offset to the high internal revenue duties of 1862 and 1864. The average rate on dutiable commodities was made about 37.2 per cent in the first year and 47.0 in the second. The Tariff of 1864 was of considerable importance because it remained the basis of tariff legislation until 1883. Internal revenue acts in 1866, 1867, 1868, and 1870 reduced the duties or swept them away until by the latter year the most important ones left were those on spirits, tobacco, fermented liquor, adhesive stamps, banks and bankers and a few on manufactures and products. Inasmuch as tariff duties were practically unchanged, protection was in reality increased, for the manu-

facturers' cost of production was lowered, and they were enabled to exact as high prices as ever and thus make greater profits. In 1867 duties on wool were actually increased as they were two years later on copper and in 1870 on marble and a few other articles including steel rails, the latter as an offset to reductions on pig iron. Duties were lowered on tea, coffee, wine, sugar, molasses, and spices, in which, of course, the domestic industry had little interest. In 1872 House and Senate bills were introduced providing for reductions, though still protective in character; the latter, accepted as a compromise, provided for a ten per cent horizontal reduction. Revenue duties on tea and coffee were abolished, some particular reductions, notably on salt and coal, were made, and the free list of raw materials for manufactures was slightly extended. Revenue decreased after the Panic of 1873 and in 1875 the ten per cent horizontal reduction was repealed. This act practically closed tariff legislation until 1883.

On May 15, 1882, a tariff commission, on which woolen, iron, and sugar interests were represented, was appointed. It reported in favor of reductions of approximately twenty per cent, but Congress treated the recommendations with scant favor. Duties were increased on certain kinds of woolen goods, especially dress goods and better grades of cloth and cassimere, on embroideries, trimmings, laces, insertions, and cotton hosiery, and on iron ore and some manufactures of steel; they were lowered on the better grades of wool, the cheaper kinds of woolen and cotton goods, copper, marble, nickel, steel rails, and barley. The measure was called by Professor F. W. Taussig "a half-hearted attempt . . . to make some concession to a public demand for a more moderate tariff system." The total reduction did not amount to more than five per cent. Possibly the act was passed only because it provided for reductions in the internal revenue duties.

Morrison's efforts in 1884 and 1886 for further reductions failed, and though tariff changes, especially free raw materials, were advocated by President Cleveland, who devoted his entire annual message to the tariff in 1887,

nothing was done, although the Mills Bill provoked the so-called "Great Tariff Debate of 1888," in which, according to Stanwood, Carlisle of Kentucky made the best speech in favor of the lower tariff and McKinley of Ohio and Reed of Maine in opposition to it.

McKinley Act.—The Republicans won the election of 1888 and early began the preparation of the measure which became the McKinley Act of 1890. The strength of the two parties was so evenly matched, however, that in all probability the tariff would have been defeated had not eastern votes been promised for increased silver coinage in return for western votes favorable to the tariff. Duties were repealed on raw sugar, reduced on structural iron and steel, on steel rails, iron, and steel plates, and the free list was extended somewhat. On the other hand, finer woolens and some others, dress goods, the better cottons, lawns, laces, and embroideries, linens, silk laces, and plush goods, cutlery, tin plate, and barley, hemp, and flax were given increased duties. The minimum principle, with specific duties, was extended to cotton stockings, velvets and plushes, boiler and plate iron, penknives, shot guns and pistols, and table cutlery. Two new principles were brought in by the act, a bounty of two cents a pound for fourteen years on sugar produced in the United States and commercial reciprocity. The president was authorized to levy by proclamation duties on sugar, molasses, tea, coffee, and hides if he believed that any country exporting those commodities discriminated unduly against the United States. Under this provision numerous treaties were made with Central and South American countries. The general level of all tariff duties was 49.5 per cent.

Wilson-Gorman Tariff.—Victorious in the election of 1892 the Democrats prepared a measure, which, loaded with 634 amendments by the Senate, finally, with alterations, of course, became the Wilson-Gorman Tariff of 1894. Cleveland refused to sign the measure. Duties were modified, but the most distinctive characteristic was free wool. Compound duties were abolished on woolen goods and the rate in general was placed at 50 per cent, though the cheaper

kinds of men's and women's wear paid 40 per cent, and a few sorts of blankets and flannels only 25. Reductions on cotton goods were from 50 to 40 and from 40 to 35. Complicated specific and ad valorem duties on knit goods were reduced to 50 per cent ad valorem. Some silk duties were reduced from 60 to 50 and others from 50 to 45. Dressed flax was admitted at 1.5 cents a pound, or half the rate of 1890. Bagging of jute, flax, and hemp for grain or cotton, as well as copper, and lumber, were admitted free of duty. Coal and iron ore were subject to a duty of 40 cents a ton, pig iron to a duty of $4.00 a ton, and steel rails to a duty of $7.84 a ton, all of which represented substantial reductions from the 75 cents, $6.72, and $13.44 of 1890. The duty on tin plate was halved, or lowered to 1.2 cents a pound, and duties on chains, guns, certain kinds of cutlery, and finer qualities of chinaware were also lowered. Reciprocity was practically abandoned and sugar duties restored. In spite of the denunciation as discriminatory against the rich and a bid for popular support, a tax of two per cent was imposed on all incomes in excess of four thousand dollars. The general level of tariff duties was 39.9 per cent.

Dingley Tariff.—The income tax was declared unconstitutional in 1894 and though the Republicans won the election on the currency issue, they proceeded to pass the Dingley Tariff of 1897 in special session. About four-fifths of the 872 amendments proposed by the Senate were accepted. The most important provision of the Tariff of 1894 was free wool; the most marked feature of the Tariff of 1897 was restoration of woolen duties. The rates of 1890 were reimposed on some commodities, compromise duties were effected on others, and in some cases the lower rates of the 1894 measure were left unchanged. Duties were raised on flax, cotton bagging, woolens, silks, linens, and certain kinds of iron and steel. The sugar duty was changed from a forty per cent ad valorem rate to a higher specific duty. Compromise duties were effected upon coal and iron, and steel duties were little changed. Reciprocity was again attempted, for the president, if satisfied that

other countries levied duties "reciprocally unequal and unreasonable," was allowed to suspend the free admission of tea, coffee, tonka beans, and vanilla beans by levying duties of ten cents a pound on tea, three cents a pound on coffee, etc. The United States followed the example of France's maximum and minimum tariff of 1892 by providing that specified duties on crude tartar, brandies, champagne, wines, paintings, and statuary might be replaced by lower duties "after securing reciprocal and reasonable concessions." A more important, though little-promising provision, was one for general tariff reduction to twenty per cent. Treaties therefor had to be made within two years, be ratified by the Senate, approved by Congress, and could last for only five years.

Payne-Aldrich Act.—The Dingley Tariff of 1897 had a longer life than any ever enacted here, but the Panic of 1907, the growing progressive movement in the Republican Party, the growth of trusts fostered by the tariff, and the efforts of the Democrats led to the Payne-Aldrich Act of 1909. The House bill proposed reductions in iron and steel and certain free raw materials, such as iron ore, coal, lumber, and hides, but the Senate fought reductions. Duties on iron, coal, and hides were urged, and lumber, cotton, and hosiery schedules were increased. Even President Taft's efforts to secure reductions accomplished little other than free hides. Reciprocity was dropped and retaliation endorsed; goods which came from countries discriminating against the United States might be subjected by order of the president to an additional twenty-five per cent duty. A tariff board to carry out the provisions of the maximum and minimum rates was established and a tax of one per cent on corporation incomes of more than five thousand dollars was imposed.

Vain Efforts.—President Taft, however, would not give up reciprocity and a preliminary agreement in January, 1911, provided for free trade with Canada in some food products, lowered rates on others, and lessened duties on certain manufactured goods. In spite of the opposition of northwestern farmers, who believed that they would have

to pay higher duties for their manufactured products and receive lower prices for their foodstuffs because of Canadian competition, the measure was forced through Congress only to meet defeat at the hands of the Canadian electorate. In the same year, the Democrats, aided by dissatisfied Republicans, carried three measures. One of these, known as the Farmer's Free List Bill, placed agricultural implements, cotton bagging, cotton ties, leather, fence wire, lumber, flour, meat, boots and shoes, and other commodities commonly used by farmers on the free list. The Woolen's Bill lowered duties in Schedule K, wool and woolen manufactures, and the Cotton Schedule Bill reduced duties on cotton manufactures, chemicals, metals, paints, and some other articles. Taft vetoed all three bills on the ground, usually, that they were improperly drawn and passed without exact information on the industries affected.

Underwood Tariff.—Because of general dissatisfaction, and especially because of the split in the Republican ranks in 1912, the Democrats won the election and shortly passed the Underwood Tariff of 1913. This measure favored reductions in all fourteen schedules, but especially in wool and its manufactures, which were lowered from fifty-six to eighteen and a half per cent. The strong opposition to free wool and sugar in the Senate failed and the bill became law on October 13. Specific and compound duties were eliminated, and rates on woolens, cottons, linens, jute goods, earthenware, glassware, and other manufactured products were reduced, and the compensatory duties of the woolen schedule were abolished. The free list was notably extended. Among articles on it were such agricultural products as meats, cattle, sheep, eggs, fish, wheat, wool, sugar and potatoes, agricultural implements and machinery, lumber, pulp, steel rails, coal, and leather. In order partially to protect Louisiana sugar planters and western beet farmers, the entire duty on sugar was not taken off until May, 1916. A graduated income, permitted by the adoption of the Sixteenth Amendment, placed, in addition to the normal tax of one per cent upon incomes in excess of three thousand dollars for single persons and four thousand

dollars for married couples, a surtax which increased in rate with the size of the income. The general tariff level was about 29.6 per cent.

Tariff Commission.—In 1916, though they had allowed the Payne-Aldrich Tariff Board to die for lack of support in 1912, the Democrats by Act of September 8, established a Tariff Commission of six members. Among its duties are: investigation of matters relating to the tariff administration, the study of fiscal and industrial effects of the various tariffs, the investigation of tariff laws in other countries, the study of competition in world trade, the summons of witnesses, and the obtaining of information. The commission, of course, makes recommendations to Congress.

Emergency Tariff.—The adoption of a high tariff, though defeated by President Wilson's veto message, March 3, 1921, was made inevitable by agricultural depression and the inauguration of Warren G. Harding and the Republican administration on March 4, 1921. Agricultural duties formed the outstanding characteristic of the Emergency Tariff. Cattle, unless for breeding purposes, received a protection of thirty per cent ad valorem and sheep if one year old or over paid two dollars a head and one if less. Beef, veal, mutton, lamb, and pork were subject to duties, as were numerous agricultural products; for instance, wheat received a protection of 35 cents a bushel, corn of 15, potatoes of 25, onions of 40, and apples and flax seed of 30. Duties were increased on textiles and textile materials, and a special dumping duty was allowed, if the secretary of the treasury was convinced that producers in foreign nations were trying to maintain high prices at home by unloading their surplus products here. Particular provision was made to protect our dyes and chemicals from competition, especially with Germany.

Fordney-McCumber Tariff.—The Emergency Tariff gave way to the Fordney-McCumber Tariff, finally accepted by the Senate, the refractory body, August 19, 1922, 48 to 25, with 2,436 changes from the House bill after it had been delayed for more than thirteen months. Conference reported other necessary changes, but the measure signed by

President Harding September 21, became effective next day. American valuation, popularly supposed to increase the protection because of the higher cost of production here, was the most talked-of phase of the measure. It was, however, rejected because of senatorial opposition, and a flexible provision allowing the president, presumably on the advice of the Tariff Commission, to increase or decrease rates fifty per cent to meet changing conditions or to allow retaliation, was adopted. In general, duties were raised considerably above the level of the Underwood Tariff and in many cases over the Payne-Aldrich Act. Live stock, dairy products, grains, fruits, and vegetables were accorded increased protection. Wheat was subjected to a duty of 30 cents a bushel in 1922 in comparison with 25 in 1909 and none in 1913, and sugar duties, except for Cuban raw at 1.76, were made higher at 2.2 a pound. Woolen duties, though materially increased over 1913, did not reach the level of 1909, and cotton and its manufactures were little above the level of 1913 and much less than that of 1909. Linen cloth was dutied at from 50 to 55 per cent, well above the levels of both 1909 and 1913, but silk and silk goods were practically the same under all three tariffs. In general, metals and manufactures were not so high as in 1909, though many had been free in 1913. For example, pig iron was free in 1913, subject to a duty of $2.50 a ton in 1909, and 75 cents in 1922; steel rails were dutied at seven-fortieths of a cent in 1909, free in 1913, and one-tenth of a cent in 1922. Duties on tobacco were changed slightly in an upward direction, and duties on spirits, wines, and other beverages, though less important now by reason of the Prohibition Amendment, were practically double the rates of 1909 and 1913.

Most chemicals were subject to higher duties than in 1909 and 1913; in fact, some of the rates were almost double the early rates. Other articles, as, for instance, cocoanut oil and cottonseed oil, were transferred from the free list and given high protection, in these two cases two and three cents a pound respectively. Jewelry rates were changed slightly in an upward direction; for example, diamonds

and other precious stones uncut were subject to a ten per cent duty in 1913 and 1922, but free in 1909, and pearls not set or strung were dutied at twenty per cent in 1913 and 1922, but only half that in 1909. Earthenware and glassware were in general given higher protection in 1922 than either in 1909 or 1913. Some articles of wood and its manufactures were given about the same rates as in 1913, but generally less than in 1909. Little changes were made in paper rates. The free list contained a wide variety of articles, among the most important of which were numerous agricultural implements, bread, hides, coffee, cotton, old books, coal, iron ore, boots and shoes made wholly or in chief part of leather, newspapers and periodicals, standard newsprint, paper, fish oils, crude petroleum and oils, raw silk, tea, tin ore, barbed wire, works of art, bananas, common house brick and Portland cement, gloves made from cattle leather, shingles, wooden logs, and potash.

That the Republicans, if not the country in general, are satisfied with the present tariff law seems evident from President Coolidge's annual message of December 6, 1923:

> The present tariff law has accomplished its two main objects. It has secured an abundant revenue and been productive of an abounding prosperity. Under it the country has had a very large export and import trade. A constant revision of the tariff by the Congress is disturbing and harmful. The present law contains an elastic provision authorizing the President to increase or decrease present schedules not in excess of 50 per centum to meet the difference in cost of production at home and abroad. This does not, to my mind, warrant a rewriting of the whole law, but does mean, and will be so administered, that whenever the required investigation shows that inequalities of sufficient importance exist in any schedule, the power to change them should and will be applied.[6]

Acting on this statement President Coolidge early in March, 1924, increased the duty on wheat from 30 cents a bushel to 42 and on flour from 78 cents a hundredweight to $1.04, effective a month later. The new duties were supposed to represent the difference in cost of production be-

[6] *Congressional Record,* Vol. 65, Part 1, 97.

tween the United States and Canada, our chief competitor. In bran and other by-products of milling the duty was

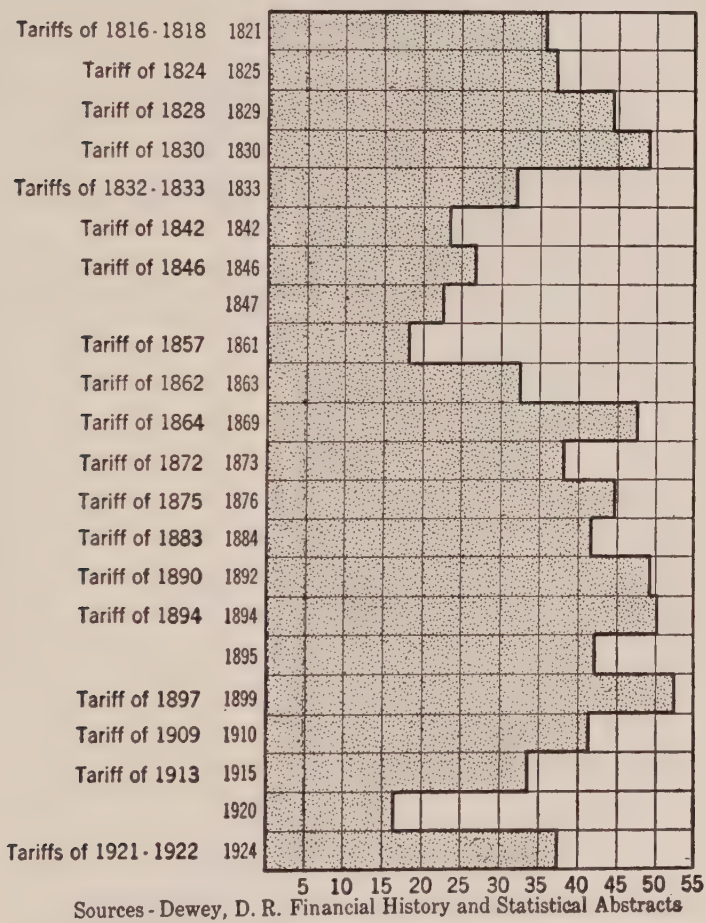

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CHART NO. 27. AVERAGE DUTY ON DUTIABLE COMMODITIES IN SELECTED YEARS SINCE 1821.

lowered from 15 per cent ad valorem to 7.5. And other changes have been made, generally in the direction of higher duties.

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CHAPTER IX

GROWING SIZE OF BUSINESS UNITS

Growth in Size.—One of the factors in the development of manufactures has been the increasing size of business establishments, for certain economies are found in large-scale enterprise. Not until 1879 did the average establishment pass $10,000 in capital and in 1899 it was less than twice that sum, but twenty years later $153,633. The product per establishment did not pass $20,000 until 1879 and twenty years later was little more than $25,000, but in 1923, $308,473. The average number of wage-earners was 10.8 in 1879 but 44.7 in 1923. Although recent census reports have omitted small concerns, which are still numerous, 5.2 per cent of the establishments with an output of more than $1,000,000 each, employ nearly three-fifths of the wage-earners and turn out two-thirds of the product. But caution in making sweeping references is needed; thus we read:

> Certain industries—those manufacturing salt, beet sugar, leather, woolen goods, automobiles, iron and steel, and coke—have shown notable increases in average size of establishments. Other industries, such as slaughtering and meat-packing, artificial ice, cotton goods, and boot and shoe manufacture, have maintained a more nearly constant level in size of establishments, and the silk, lumber, carriage and wagon, and shipbuilding industries have recorded tendencies to decrease in average size of establishments.[1]

Some contrasts for particular manufactures will be apparent from the study of Charts 28-30.

[1] Thorp, W. L. *The Integration of Industrial Operation* [Government Printing Office, Washington, 1921] 74.

Concentration has been estimated through the central office group, which exists when two or more establishments are operated from a single central office. Extremes of concentration are found in railroad repair shops and chemicals and allied products and of decentralization in paper and printing. Over two-thirds of the central office establishments are confined to one line of industry and are thus horizontal combinations; the remainder operate two or more

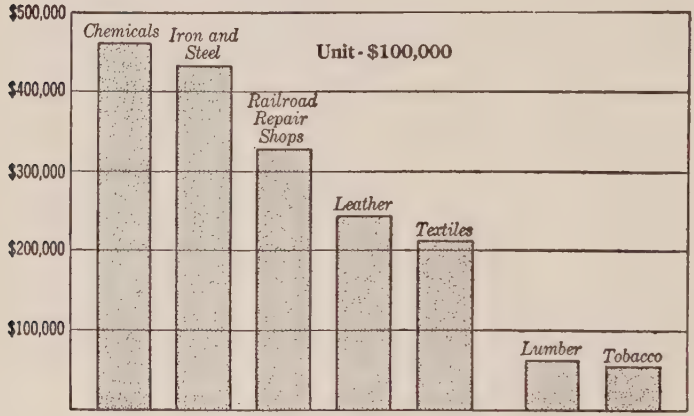

CHART NO. 28. CAPITAL EMPLOYED IN 1919 IN AVERAGE ESTABLISHMENT.

lines of production and in general represent vertical combinations. The central office group contains about one-thirteenth of all establishments, but employs one-third of the wage-earners and produces one-third of the product.

Ownership.—With the development in size of business units has gone a change in character of ownership due to the need for more capital. In the type common in agriculture, the owner and manager are one and the same. Now less than six per cent of the manufacturing product is made under the individual type. In the partnership two or more individuals unite their capital or ability, perhaps both. A contract by one binds all and each is liable to the full

amount of his property. In 1900 partnerships produced nearly one-fifth of all manufactured products, but now only about a third of that proportion. Corporations, which attract more capital and enjoy limited liability, perpetual life, and a distinct corporate identity, have increased

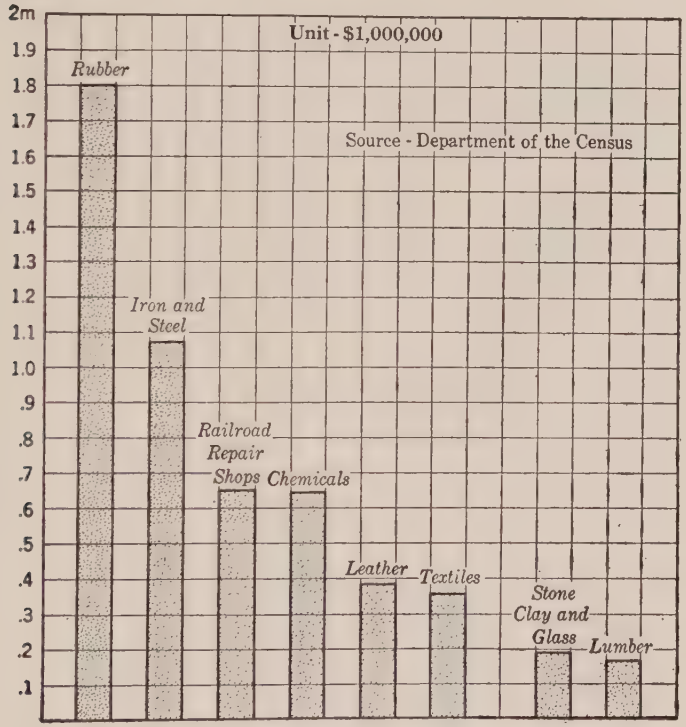

CHART NO. 29. PRODUCT OF THE AVERAGE ESTABLISHMENT, 1923.

rapidly over the other forms and now number about a third of all manufacturing establishments and employ seven-eighths of the wage-earners and produce seven-eighths of the product.

Evolution of Combinations.—In the evolution of forms of combination pools, trusts, communities of interest, holding companies, amalgamations, and mergers need to be

noted. Pools and trusts, discussed later in the chapter, are illegal. Business men sometimes bought up controlling interests in corporations and without formal organization worked together in the management of the different companies in the so-called communities of interest. But de-

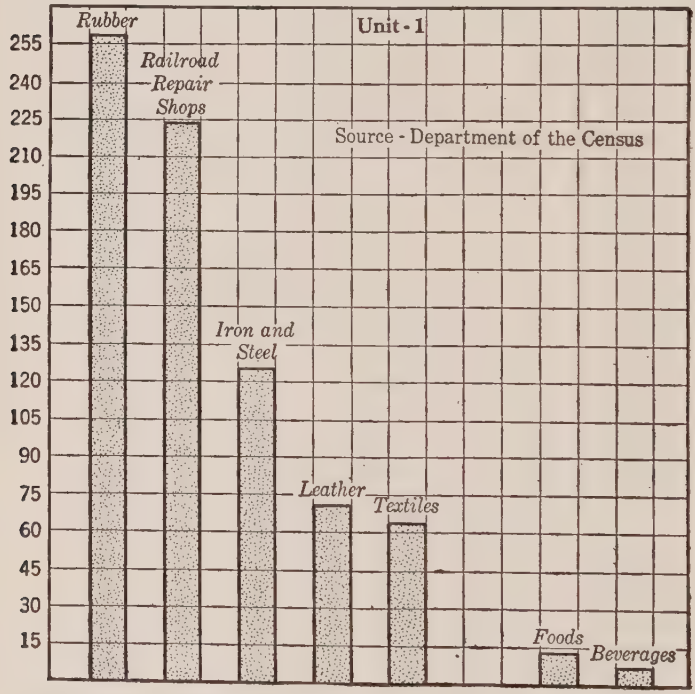

CHART NO. 30. AVERAGE WAGE-EARNERS TO THE ESTABLISHMENT, 1923.

sirous of a stronger form of control they at times turned to the holding companies, which were new corporations organized for the purpose of obtaining a majority interest in the group of establishments whose control was desired. Other business men preferred outright amalgamation whereby a new corporation was formed to buy a group of companies. If one corporation already in existence bought

up and assimilated the others in its organization, the term "merger" was applied. The significant thing in all of these combinations is that a high degree of concentration in the control of business is demanded. Mere bigness was not held illegal by the Supreme Court in the case of United States Steel in 1920, but the matter is doubtful, because in the same year the Reading Company was ordered dissolved by the same court because of "dominating control."

Definition of Trusts.—In this chapter large establishments which have sufficient control of output are considered as trusts. Two authorities, Jeremiah W. Jenks and Eliot Jones, may be quoted on definitions. The former declared: "Trusts are taken to mean manufacturing corporations with so great capital and power that they are at least thought by the public to have become a menace to their welfare, and to have temporarily, at least, considerable monopolistic power."[2] The latter wrote:

> A trust (industrial monopoly) may be said to exist when a person, corporation, or combination owns or controls enough of the plants producing a certain article to be able for all practical purposes to fix its price. Control over the price is the fundamental test of monopoly; it is its essential and characteristic feature.[3]

Early Movement.—Even if the trust movement has been chiefly a product of the last quarter of a century, it may not be amiss to note that legal monopolies have been known for centuries in various countries, that salt producers in this country combined to restrict output as early as 1830, that the pool was employed among manufacturing establishments, as well as by railroads, shortly after the Civil War, and that holding companies were known as early as 1870. The years 1879-1887, according to Professor W. Z. Ripley, were characterized by an increase in size and number of large-scale organizations, one of which, the Standard

[2] *The Trust Problem* [Doubleday, Page and Company, Garden City, 1917] 10.

[3] *The Trust Problem in the United States* [The Macmillan Company, New York, 1921] 1.

Oil Trust, is perhaps the best known in the world to-day. The next ten years saw the formation, among others, of oil, sugar, and tobacco trusts. Before taking up the trust movement proper, however, it will be advisable to note briefly the first and most common method of restricting competition, namely, the pool.

According to Professor Jones, the pool was of six types. The first, commonly found in iron, steel, anthracite, and other industries, was known as the gentlemen's agreement; it was merely a "verbal understanding" looking toward price control. A second type, the speculative pool, of which the French Copper Syndicate of 1887 was an example, attempted by temporary arrangements to control prices and broke up when the object was attained. A third type, found in cotton bagging, anthracite, steel rail, wire nail, and meat-packing industries, attempted to regulate output and thus prices by agreement among the establishments concerned. The division of the field among various companies, as in pipe, wire, meat, tobacco, steel, and other industries, formed a fourth type of pool. In the selling agency, a fifth type, all manufacturers turned over their entire output to a central selling agency, which handled all sales, as in the Michigan Salt Association of 1876 and the Continental Wall Paper Company of 1898. The last type was the patent pool. In 1896 the General Electric Company and the Westinghouse Company, which between them controlled nine-tenths of the electric supplies, formed a pooling agreement for the common use of practically all of their patents.

Trustee Device.—Pools, though often successful, revealed weakness in two important points, for they failed to secure stability of prices and policy and they were "non-enforceable in the courts" and after 1887 presumably illegal. To secure their objects without becoming amenable to law, manufacturers consequently turned to the trustee device, the first example of which came in the case of the Standard Oil Company. Even earlier than 1879 John D. Rockefeller and his associates gained control of a large number of oil concerns for the Standard Oil Company. Registration of

stock in the names of different individuals who held it for the company's benefit did not give the degree of control desired, and so the trust was organized in 1879 and revised three years later, at which date the combination included about forty companies which controlled over nine-tenths of the country's oil refining capacity. The organization called for nine trustees who received from the stockholders concerned an assignment of stock with voting power for which

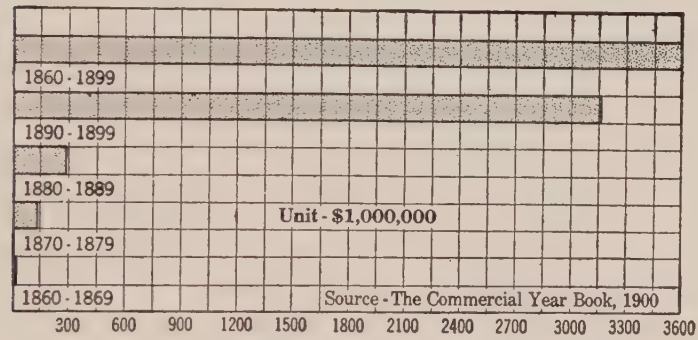

CHART NO. 31. TRUST FORMATION, 1860-1899.

they gave "trust certificates" which represented the valuation of their properties. This stock was held for the joint account and the stockholders in any one company lost by the trust agreement their titles to stock in that particular company and received in its place a corresponding interest in all stock and property held by the trustees. Because four of the nine trustees held a majority of the 700,000 shares and all of them 466,280, they could elect officers and directors and manage the properties as they wished.

Trust Movement.—Among the other early trusts were the American Cotton Oil, the Sugar Refineries, the Whisky, and the National Lead trusts. According to *The Commercial Year Book,* 1900, for the decade ending in 1869, manufacturing, commercial, and gas trusts formed numbered two, for the next decade four, for the decade closing in 1889 eighteen, for the next decade 157, and for the forty

years 181 with the capitalization given in the chart. The movement began on a large scale in 1898 and for two years ran at white heat. In 1899 new combinations with a nominal capital of $3,512,000,000 were reported, but about a fourth of that represented inflation of former capital in the reorganized companies. The most famous trust was the United States Steel Corporation formed in February, 1901, with a capital stock of $1,018,000,000 and bonds of $301,000,000. An estimate for 1904 gave 318 industrial trusts with a capital of $7,246,000,000. (See chart, p. 225.)

Examples of Trusts.—In 1892 the trust agreement of the Standard Oil Company was declared illegal by the Ohio courts and for the next seven years, or until that arrangement was attacked, the oil men relied on a community of interest arrangement. In 1899 they decided to reorganize in New Jersey as a holding company, simply a corporation which "acquires the stocks of the several combining concerns,—either all of the shares, or enough to give control." The directors thus become the managers, "just as the trustees under the trust scheme were designed to be." As a result of the adverse decision of the Supreme Court in 1911 the shares of the holding company were distributed among the shareholders of some thirty-eight corporations and Standard Oil still exists as a large group of state corporations.

In 1892 the Sugar Trust controlled ninety-eight per cent of the refined cane sugar and the beet sugar was then negligible, but from 1907 to 1909 it controlled seventy-two and in 1910 forty-two per cent of all refined sugar. The Tobacco Combination by 1900 had acquired control of all tobacco manufacturers except cigars. The American Tobacco Company formed in 1904 continued to dominate the field until its dissolution in 1911. In 1899 the United Shoe Machinery Company was formed; the organization did not gain control of the machinery used in the sole leather room, the stitching room, or the finishing room, but in outsole stitching machines it produced about seventy-eight per cent and of every other machine used in bottomry it had from ninety-four to a hundred per cent. The strength of the

company lay largely in its organization with the monopoly based on patents and in the tying clauses of its leases. By the latter expedient, declared illegal by the Supreme Court in 1922, the company, which controlled ninety-five per cent of the business, would practically refuse to let a shoe manufacturer have a lasting machine unless he would agree to use such other company products as the welter, stitcher, and metallic fastening machines. The United States Steel Corporation at its organization controlled three-fifths of the steel business, and court decisions have uniformly favored it. The International Harvester Company in 1903, the banner year, produced 94.2 per cent of the grain binders of the United States and 87.7 per cent of the mowers.

Chances of Success for Trusts.—Monopoly often means very high profits, and dividends in all of the trusts just noted have been more than generous. The impression that the trust form of organization means success is, nevertheless, wrong. When the Census Bureau investigated 183 industrial combinations in 1900, it found that sixty-two had paid no dividends and that of the ninety-two which paid dividends on preferred stock, sixty-two paid none on common stock. Of the thirty largest trusts formed prior to 1904, eight were highly successful, seven fairly so, ten were unsuccessful, and five were disastrous failures. Professor A. S. Dewing found that, instead of increasing profits by fifty per cent as the promoters claimed, the actual earnings of thirty-five consolidations were eighteen per cent greater before the consolidation than in the first year after consolidation, and that earnings were no more and possibly less in the tenth year of consolidation than in the first. In only four combinations did earnings exceed expectations in the first year of combination and in only five for the ten-year period.

Advantages—General.—Successful trusts enjoy the advantages of large-scale production, among which are: better application of the division of labor, more economical use of expensive machinery and equipment, greater economy in the purchase of supplies, better use of by-products, and greater expenditures in experimentation. Still other ad-

vantages enjoyed are: efficient organization, economies in bargaining, economies in production, economies in the sale of products, unlimited quantity of desired article, and a more varied stock of goods.

The division of labor permits one man to do a certain thing and with the use of expensive machinery encourages the fullest utilization of both man and machinery. No time is lost by the man running from one machine to another or wasted by shutting off the machine to take up a slightly different task. Sellers of various kinds of materials are, to be sure, willing to make a lower price to the large-scale buyer than to the small-scale purchaser and the saving thus effected amounts to thousands of dollars each year. When the by-products are large, it becomes economical to install the necessary apparatus to care for them and consequently the general profits are increased. Large-scale production, moreover, makes it worth while to keep trained men whose business it is to make continual experiments with new methods, and these experiments may mean a saving of hundreds of thousands of dollars.

Bargaining.—The economies in bargaining fall into at least five groups. In the purchase of materials and supplies large establishments buy more cheaply than small ones, though it is doubtful if a trust can buy more cheaply than a large combination unless, indeed, it may restrict the demand for raw materials and thus depress prices. Such a result is unlikely, for other establishments may use the same raw materials and the policy is, moreover, harmful to general prosperity. A second advantage is found in dealing with distributors, for the trust may encroach upon the margin of jobbers and require the wholesaler and retailer to sell only trust-produced goods, a requirement sometimes strengthened by granting a rebate for faithful observance. A third bargaining advantage is found in the case of labor difficulties; for instance, in 1899 the American Smelting and Refining Company experienced a strike of workers in its Colorado plant where it suspended operations, but continued them elsewhere with slight loss to itself, but with heavy loss to the strikers. The Sugar Trust gained a simi-

lar success in handling a strike at the Brooklyn refinery in 1910. A fourth bargaining advantage in all probability lies with the trust, for, because of its monopoly strength and the financial standing of its directors it has and does borrow more cheaply than other concerns, with the possible exception of the large organization. Then, too, because of the wide distribution of trust business and the public belief in its economies, securities may be readily marketed; this advantage, however, is probably slight, for many trusts now finance themselves from their own surplus earnings. In the not distant past, as a fifth bargaining advantage, some trusts enjoyed lower railroad rates than their competitors, but this practice is generally condemned and is diminishing.

Production.—Among the economies in production for trusts, but for large corporations as well, are: continuous operation of plants, specialization in plants and machinery, specialization in ability, employment of best devices, competition between plants, utilization of by-products, insurance, and smaller fixed charge per unit. The American Sugar Refining Company, as an example of the first, used the Brooklyn refinery as a sort of safety valve. When business was good, it increased that refinery's capacity, but when the market was overstocked it closed the plant or at least lowered its capacity. The American Steel Hoop Company shows one of the best examples of the second advantage. Prior to its formation each plant was compelled to keep on hand a large variety of rolls and make frequent changes in order to manufacture iron and steel hoops, bands, bars, and cotton ties, but after the organization of the trust each plant could specialize more or less on particular shapes or sizes.

Because of its very hugeness the trust permits great specialization in business ability, and this "combination of talent," the president of the American Tobacco Company believed, was the main advantage of his trust. When numerous plants are combined into a whole, each may profit from the best devices and patents of all. The competition of the various plants turning out the same product makes for a healthy rivalry which tends to raise the general

level of efficiency. Trusts, as in the case of other large organizations, can utilize by-products, though this is sometimes of little importance. In steel and tobacco, for example, there are no by-products and in the case of cane sugar, molasses and sirup are the only ones of importance. Small savings, if plants are widely distributed, are sometimes made in insurance, especially fire; an example of such a saving may be found in the case of the American Agricultural Chemical Company. In the trust, as with the large combinations generally, fixed charges are smaller for each unit of product simply because more units are produced.

Distribution.—Advertising, traveling salesmen, export trade, cross freights, bad debts, and smaller stock of goods are among the economies in selling. Although a trust may spend money lavishly in advertising in order to justify its existence, savings are sometimes effected. For instance, when the Tobacco Trust prior to 1900 controlled fifty-five per cent of the little cigar output, it spent ten per cent of its net receipts from them, less taxes, on advertising, but from 1905 to 1908 when it controlled eighty-five per cent of the output it spent only one per cent. Many salesmen, according to Mr. Dowe, president of the Commercial Travelers' National League, thirty-five thousand, lost their positions during the period of trust formation. Twenty-five thousand more suffered wage reductions. These figures seem somewhat high, but the Whisky Trust made a saving of a million dollars a year in the Kentucky division alone by discharging about three hundred drummers. The Royal Baking Powder Company replaced many four and five thousand dollar men with some drawing less than a thousand dollars a year. Opportunities for the study of the foreign market and superior credit facilities may give the trust a slight advantage over its competitors, and its advantage in dumping, that is, selling an exported article at a lower price than in the home market in order to keep up domestic prices, has long been apparent.

In the case of bulky products savings in cross freights may be effected by having the plant nearest the customer

fill the order. This item, according to the president of the Wire Trust, meant a saving of $500,000 a year to his company. Because the trust is not subject to the competition that ordinary companies must meet, it may avoid undue credit extension to purchasers and thus effect a small gain. The stock example of this advantage is the American Steel and Wire Company which reduced its percentage of loss from bad debts from one-half of one per cent to one-twenty-fifth. Because the trust covers the entire country and has such a large percentage of the output, it does not need to keep on hand such a large stock, for its managers can gauge the demand more effectively, and this means a saving in interest, insurance, storage, and other charges. The trust can, moreover, because it is able to supply the demand, obtain a slightly higher price for its product. The American Sugar Refining Company was able at one time to exact an eighth of a cent per pound more for its sugar than its rivals, simply because jobbers preferred to buy where they were sure of a supply. Again, a trust can handle, if it so desires, several grades of an article and thus reach many classes of people. That advantage was one of the factors in the success of the American Tobacco Trust.

Drawbacks.—Many of the advantages just noted are common to large business and many have been overemphasized. Even the power to regulate prices may be checked by the chance of substitution, the possibility of competition, or the danger of government interference. There are, moreover, many countervailing factors, as pointed out by Professor Eliot Jones, whom we have been following, namely: the inability to secure at times the necessary business skill, the difficulty of securing the best work of the operating officials, the danger of stagnation, the added financial expenditures, and the weight of the centralized administrative machinery.

Few men who can manage successfully a single plant can direct well a number of plants, for problems are multiplied and errors of judgment are especially harmful because they affect a whole industry rather than a single plant. Even if the necessary talent exists, it cannot always be secured,

for many business men of great ability refuse to accept high-salaried positions because they prefer to be their own masters. Again, the most highly talented men, if secured, will not always give the best of which they are capable, for as trust promoters concede, they will not give such close personal attention to the business as they would if it were their own. Even when the most competent and honest men are secured, they can with difficulty check up on plant managers dozens of miles away.

Because trusts are monopolies, they are less likely to adopt new inventions or improvements, for expensive plants and equipment would have to be scrapped. Competition means the introduction of improved methods, but monopoly means stagnation. John Stuart Mill gave a classic indictment when he declared that protection against competition was protection in mental dullness. Trusts, to be sure, have made improvements, but they have encountered much opposition in maintaining their position save where they were protected by patents or enjoyed the control of natural resources. Again, trusts are subjected to financial outlays which individual enterprises or combinations, if they have them at all, have in lesser degree. Trusts generally own a number of scattered plants which necessitate the maintenance of an extensive and costly supervising force. In addition some trusts are burdened with old and inefficient plants which were bought to stave off competition. If they were paid for in stock, profits were naturally reduced; if bonds or cash were used, they formed a permanent drain on the revenues. Some trusts, such as sugar, tobacco, gunpowder, glucose, and starch, have been forced to buy up competitors almost continuously and this has acted as an added drain on resources, no matter whether the competing concern was bought outright at a high figure or after a price war. Large business enterprises and especially the trust "are likely to suffer from the burden of centralized administrative machinery," for because they ordinarily do a country-wide business and own widely separated plants, elaborate department and subdepartment systems must be devised. Authorities dislike change, and enthusiasm and

initiative in subordinate officials are, therefore, frequently checked.

Charges Brought Against Trusts.—Among the charges made against the trusts are: that they enjoy legislative favor through the protective tariff, that they corrupt politics, that they obtain low rates from railroads, that they practice unfair price cutting, and that they force jobbers and local dealers to boycott other products. Many trusts have undoubtedly grown up behind the shelter of the protective tariff. Mr. Havemeyer, long the head of the Sugar Trust, testified that he would not have risked putting his refineries into the Sugar Trust had it not been for the high protective tariff. By means of the tariff wall high prices have been maintained here, while surplus products have been dumped on foreign markets at low prices. At one time the United States Steel Corporation exported steel rails for twenty-three dollars a ton, while it charged twenty-eight dollars for the same rail in this country. The American Tobacco Company fixed the export price of certain cigarettes lower than the domestic price and its president defended the practice. Other trusts followed similar policies and thus aroused much opposition.

Still another charge brought against the trusts is that they corrupt politics by the use of bribery and large campaign contributions. A third charge which violates the American sense of fair play is that of low rates secured from railroads. The Standard Oil Company at one time entered into a contract with a railroad then operated by a receiver whereby its oil was carried for ten cents a barrel, while its competitors were charged thirty-five. To make this discrimination still more unfair five-sevenths of that amount was given by the railroad to the Standard Oil Company. By the control of pipe lines the trust could and did discriminate in its own favor prior to 1906. It also probably under-billed some of its tank cars, though this charge has not been proved. The Sugar Trust and others before the legislation of 1906 and 1910 likewise profited from lower railroad rates.

Still another charge brought against the trusts has been

that of unfair price cutting. Where competition was marked, trust-made goods were sold abnormally low, but at non-competitive points higher prices were charged. After competition had been crushed at the low-price points, the price of the article was raised in a marked degree. Such discriminations in price have been practised by many trusts, among which the Standard Oil proved the most notorious.

A fifth charge made against trusts was that they compelled the boycott of other products by the jobbers and local dealers who handled the trust-made goods. Even though this charge was not proved in many cases, the inclusion of a clause in the Clayton Act forbidding exclusive selling or leasing contracts when they tended to restrict competition or cause monopoly seems to indicate that there was some truth to the statements.

Among other charges, which have been more or less clearly proved, are over-capitalization and excessive prices. By making the capitalization more than the property and business justify, the apparent rate of earnings is decreased and the public, moreover, is deceived with regard to the value of investment, for it "still believes in spite of many sad experiences, that the par value of a share of stock bears some relation to its real value," or in other words, that if to the holder of every share of stock worth $125 an additional share is given, each share will still be worth about $125. Excessive prices have been charged by various trusts, including among others, oil, sugar, steel, and copper.[4]

State Legislation.—The organization of trusts was followed by a bitter attack on them through state and national law. In 1889, for instance, at least six states—Kansas, Maine, Michigan, North Carolina, Tennessee, and Texas—passed laws against them. Courts also attacked the organizations in their decisions, as Louisiana the Cotton Oil Trust, Nebraska the Whisky Trust, New York the Sugar

[4] See Ripley, W. Z. *Trusts, Pools and Corporations* [Ginn and Company, Boston, 1916] 674-676, for the summary of the charges made against the National Cash Register Company, which Professor Ripley calls an "industrial pirate."

Trust, and Ohio the Oil Trust. Decisions were generally adverse to the trusts, but the trust movement, though possibly slowed up, was stopped neither by legislation nor by judicial decision. By 1914 all the states except seven had laws or constitutional provisions against the trusts. Concerning the state legislation at that time, two eminent authorities, J. W. Jenks and W. E. Clark, declared:

> On the whole, it is a quarter-century record of consistent legislative battling against Trusts, with a growing determination amongst the States that Trusts shall be destroyed. The acts have been steadily strengthened and more and more states have legislated as the years have passed. If the state legislation be taken as the indicator of the American attitude toward Trusts, then it must be said that the overwhelming majority sentiment of the people is against the existence of large industrial combinations.[5]

Sherman Act.—Since state legislation proved ineffective in the early period, chiefly because of the liberal policy of New Jersey, Delaware, and West Virginia, more reliance came to be placed upon national legislation. In 1890 after two years of debate both houses by large majorities passed the first of the Federal statutes curbing trusts, the Sherman Anti-Trust Act, which sought to destroy or prevent combinations operating in interstate commerce if they tried to restrain or monopolize trade. Penalties applied to individuals as well as to corporations and the courts had power to fine offenders as much as five thousand dollars or to give them jail sentences or to impose both penalties. Federal district attorneys were instructed to prosecute offenders, and courts were authorized to summon witnesses, to declare certain property of the corporation tried forfeited, and to give treble damages to the person who could prove that he had been injured by an unlawful combination.

Efforts 1890-1913.—Between 1890 and 1903 many trust bills were introduced in Congress, but the only one which became a law was appended to the Wilson Tariff Act of 1894. Some of the sections in this act declared illegal any

[5] *The Trust Problem*, 248.

importing combination which attempted to restrict trade or competition and to raise either the prices of imported goods or the things made from them. Nine years later Congress created the department of commerce and labor and made provision for the bureau of corporations, whose chief tasks were investigation and publicity. It has, nevertheless, given advice to the department of justice on law infringements. Between 1905 and 1915, when it was absorbed by the Federal Trade Commission, it published twenty-nine volumes which gave detailed information on the trusts. The head of the bureau had power to compel the attendance and testimony of witnesses and the production of documentary evidence. In the same year an expediting act was passed to lessen delay in the settlement of trust cases. In 1910 the act was amended and in the same year the Mann-Elkins Act declared illegal the solicitation of information from carriers concerning the business of competitors. In 1911 and 1913 acts which granted naval appropriations for the following years attempted to prevent trusts from getting the business. In 1912 an act relating to the opening and operation of the Panama Canal denied the use of the canal to the ships of any person or company which did business in violation of the Sherman or Wilson acts. The next year another act declared that testimony in cases under the anti-trust laws should be taken in public.

Trade Commission Act.—When the Democrats came into power as the result of the election of 1912, they enacted two important laws, the Trade Commission Act and the Clayton Act, both of which were passed in 1914. The first created a Federal Trade Commission of five members who served for five years at a salary of ten thousand dollars a year. The act declared "unfair methods of competition" illegal and gave the Trade Commission the task of prevention. It could serve complaints, hold hearings, and order the stoppage of unfair methods. If its orders were disobeyed, it could carry the matter to the circuit court of appeals for injunction and that court could also pass on appeals made to it by interested parties. The

Supreme Court, under prescribed conditions, that is, complaint of errors and irregularities or a lack of justice, commonly designated as on certiorari, might have cases appealed to it. The commission could investigate corporations doing an interstate business and could examine into and make public the way in which decrees affecting the trust were carried out; it could, when requested by the president or either house of Congress, investigate alleged offenses against the law, and must, when requested by the attorney-general, examine into practices which violated the law.

Clayton Act.—Although the chief functions of the Trade Commission were thus to investigate and advise, the Clayton Act, on the other hand, was a penal measure. It declared price discriminations in interstate commerce unlawful if the effect was to "substantially lessen competition or tend to create a monopoly," labeled as illegal exclusive selling and leasing contracts when the tendency was to lessen competition or create a monopoly, and forbade the acquisition of stock by one corporation in another or the combination of corporations where competition would be weakened, commerce restrained or monopoly created or furthered. Agricultural and horticultural organizations "not having capital stock or conducted for profit" were exempted. Various restrictions were placed on interlocking directorates intended to prevent groups of men from controlling the policies of numerous companies "which could not combine outright without violating the law." Violation of the law by a corporation was considered a violation by its responsible directors, officers, and agents who were declared to be liable to the penalties of the Sherman Act.

Export Trade Act of 1918.—The Export Trade Act of 1918, generally known as the Webb-Pomerene Act, permitted and legalized the organization of trusts for foreign trade provided they did not enter into a combination to depress or to raise prices in the United States or to restrain competition therein. This law, moreover, allowed the acquisition of all or part of the stock of another com-

pany by an association provided it did not thereby "restrain trade or substantially lessen competition within the United States." The act condemned the use of unfair practices against American competitors and extended the jurisdiction of the Trade Commission to foreign trade. Associations, under penalty of a fine of a hundred dollars a day, were required to file certain information, such as the names and addresses of officers, members, and stockholders, and a copy of the articles of incorporation or association with the commission.

National Court Decisions.—Let us consider the attitude of the national courts where hundreds of cases were filed charging violations of the anti-trust laws. The Knight Case, 1895, was a victory for the American Sugar Refinery which through the purchase of a refinery in Boston and four in Philadelphia had gained control of ninety-eight per cent of the sugar output. In the Trans-Missouri Freight Association Case the court considered the agreement of eighteen railroads to fix rates west of the Missouri a violation of the law and in 1898, a year later, arrived at a similar decision in the case of thirty-one railroads which carried on a traffic between Chicago and the Atlantic "because it affected interstate commerce by destroying competition." In 1899 the court decided in the Addyston Pipe Case that six corporations which worked together by putting in bids on various jobs with the intention of alloting the work to one violated the law through limitation of competition. In the Northern Securities Case in 1904 the court decided that a holding company which merged the interests of the Great Northern and Northern Pacific, two competing railroads, was illegal. These cases seem to show that sentiment was against the trust, but the imposition of the enormous fine of $29,240,000 on the million dollar subsidiary Standard Oil Company of Indiana for loading 1,462 cars at a discriminating rate in violation of the Elkins Law perhaps caused sentiment to favor the trusts.

In 1911 the government succeeded in obtaining orders for the dissolution of the Standard Oil, Tobacco, and Sugar

trusts. It gained partial successes in the case of the National Cash Register Company in 1916 and the International Harvester Company in 1918, but a decision in the latter year was favorable to the United Shoe Machinery Corporation, and two years later the Supreme Court held that the United States Steel Corporation was not a trust within the meaning of the Sherman Law. Although other decisions, like those ordering the dissolution of the Lehigh Valley Railway Coal Combination and the Eastman Kodak Company in December, 1920, have been rendered, the courts seem inclined to apply the rule of reason and distinguish between good and bad trusts. In other words, judicial as well as legislative bodies tend toward regulation rather than prohibition. Perhaps a slight reversal of policy was indicated by cases started in 1924 and by the order of the Federal Trade Commission, which, subject to appeal to the Supreme Court, ordered the discontinuance of Pittsburgh plus, or the system which based the price of steel on the Pittsburgh price plus the equivalent of the freight charge from Pittsburgh to the customer's destination.

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CHAPTER X

LABOR

An efficient labor supply is an important factor in economic development. In this chapter we shall attempt to note briefly the principal kinds of labor found in our early history, to sketch the slavery question in politics, to describe working conditions, woman labor, child labor, and foreign labor, to sketch the development of labor organizations, to describe a few of the labor disturbances, and to refer briefly to conciliation, arbitration, legislation and court decisions, and social insurance.

Slavery.—Slavery as an institution is nearly as old as history, though in the beginning death was the doom of the captive taken in war. Men soon, however, began to spare the prettiest women for immoral purposes and the strongest men for work. Greeks, Romans, and other ancient peoples, as well as Teutons and Slavs, Christians and Mohammedans, held slaves, but during the Middle Ages a transitory system known as serfdom, to which indentured servitude and apprenticeship presently to be discussed are not strangers, developed. Professor J. K. Ingram points out certain things which favored that transition in the late Roman system, namely, the diminution in supply of slaves, the rehabilitation of the free workers through acquiring more honorable work, the difficulty of changing from one occupation or profession to another, and the merging of the rural and praedial slaves with the coloni who originally held land on lease by the payment of a cash or share rent. When the new world was discovered slavery was, nevertheless, revived. The first slaves landed in what is now the United States were the twenty sold at Jamestown by a Dutch trading vessel in 1619.

Growth was slow at first and as late as 1681 Virginia had only two thousand slaves in comparison with three times that number of indentured servants. Growth thereafter was more rapid and by 1760 the number, scattered in all of the colonies, was about 386,000, of whom about three-fourths were south of the Mason and Dixon Line. Thirty years later the number had not quite doubled, but by 1830 it was slightly more than two millions, and in 1860 nearly twice as many. Growth, however, as noted elsewhere, was slower than that of the white population.

In the colonial period slaves were chiefly used for tobacco and rice cultivation, but in the forty years prior to the Civil War the main use was for cotton cultivation. With the legal prohibition of slave importations after 1808 the price of slaves rose. In 1815 a good slave for cotton cultivation was worth about $250, in 1840 more than twice as much, and in 1860 from $1,500 to $2,000. The main defects of slave labor, as summarized by Professor J. E. Cairnes, were: reluctance of labor, lack of versatility, and lack of skill. The first defect condemned to constant oversight and often cruel treatment; the second contributed to a one-crop exhaustive system of agriculture; and the third meant wasteful cultivation and poor methods. Numerous thoughtful Southerners, as well as Northerners, believed that the system did not pay, but the need for labor, the ease of organizing slaves and of giving suitable tasks to all throughout practically all of the year, and the social prestige attached to slave-owning overcame the handicaps of the system in the eyes of most southern people. Not more than five per cent of the southern people held slaves. In 1860 the 3,953,742 slaves, exclusive of the eighteen colored apprentices for life in New Jersey, were held by 384,884 owners, about three-fourths of whom held less than ten slaves each and about half less than five.

The food of the slaves was cheap, generally produced on the plantation, and consisted ordinarily of corn and pork products sometimes eked out by molasses and garden vegetables. A slave's clothing was of the crudest sort. Food and clothing cost perhaps thirty dollars a year or

five and a half cents a day for an able-bodied slave. Some estimates are higher and others lower. Olmsted, for example, notes a Louisiana planter who supported a large plantation force, so he said, on two and one-twelfth cents per capita per diem. If the various items entering into the yearly cost of a slave are considered—interest on capital invested, food, clothing, lodging, depreciation, taxation, and insurance against death, sickness, and flight—the cost was at least thirty-five cents a day and perhaps closer to fifty.

It would be useless to try to characterize in short space the treatment of the slaves, for that treatment depended in large part upon the character of the owner. The description, too, depended in part upon the bias of the writer. Two men, John Davis and Isaac Weld, both opponents of slavery, will be quoted. The former, after referring to beatings, the use of irons, etc., commented on newspaper advertisements:

> The *Charleston* papers abound with advertisements for fugitive slaves. I have a curious advertisement now before me. "Stop the runaway. Fifty dollars reward. Whereas my waiting fellow, Will, having eloped from me last Saturday, *without any provocation,* (it being known that I am a humane master) the above reward will be paid to anyone who will lodge the aforesaid *slave* in some jail or deliver him to me on my plantation at *Liberty Hall. Will may be known by the incisions of the whip on his back;* and I suspect has taken the road to *Coosohatchie,* where he has a wife and five children, whom I sold last week to Mr. Gillespie."[1]

Weld, though an opponent of slavery, gave a very favorable account of that institution in Virginia, where treatment was better than in the rice, cotton, and sugar states. He declared:

> The large estates are managed by stewards and overseers, the proprietors just amusing themselves with seeing what is going forward. The work is done wholly by slaves, whose numbers are in this part of the country more than double that of white per-

[1] *Travels of Four Years and a Half in America* [Henry Holt and Company, New York, 1909] 100, 101.

sons. The slaves on the large plantations are in general very well provided for, and treated with mildness. During three months nearly, that I was in Virginia, but two or three instances of ill treatment towards them came under my observation. Their quarters, the name whereby their habitations are called, are usually situated one or two hundred yards from the dwelling house, which gives the appearance of a village to the residence of every planter in Virginia; when the estate, however, is so large as to be divided into several farms, then separate quarters are attached to the house of the overseer on each farm. Adjoining their little habitations, the slaves commonly have small gardens and yards for poultry, which are all their own property; they have ample time to attend to their own concerns, and their gardens are generally found well stocked, and their flocks of poultry numerous. Besides the food they raise for themselves, they are allowed liberal rations of salted pork and Indian corn. Many of their little huts are comfortably furnished and they are themselves, in general, extremely well clothed. In short, their condition is by no means so wretched as might be imagined. They are forced to work certain hours in the day; but in return they are clothed, dieted, and lodged comfortably and saved all anxiety about provision for their offspring.[2]

And the treatment thus pictured at the close of the eighteenth and the beginning of the nineteenth century lasted until the overthrow of slavery, quotations both favorable and unfavorable being available. Some masters and mistresses bred slaves for the market, selling them to the cotton states at the rate of twenty-five thousand or more per annum after 1840. Slaves, too, were still whipped, hunted with bloodhounds, and, occasionally, kept in irons. Punishment was usually swift and terrible if a white woman was insulted. Yet, according to Olmsted, on some large plantations, overseers whipped the grandchildren of the owner in the fields. Churches generally held that if slaves married and one was sold into a distant part of the country, either could contract another marriage relation without the formality of divorce. But there were fewer Simon Legrees in real life than the love of the spectacular and the writings of propagandists

[2] *Travels* [London, 1800] 84, 85.

would have us believe. In all probability, the majority of the owners, but not all by any means, gave favorable treatment not alone because of humanity but, also, because of the capital invested in the slaves.

Slavery in Politics.—Agitation for the freeing of the slaves began almost with their introduction, though perhaps the first public protest was that of the Germantown Quakers in 1688. The agitation entered colonial and later state legislatures and led to restrictions and even prohibitions on the importation of slaves. George Washington, Thomas Jefferson, John Randolph, and other prominent men spoke against the institution of slavery and with the formation of a national government the question came up repeatedly. In 1774 and 1776 the Continental Congress forbade the importation of slaves into the colonies, debates in the Constitutional Convention of 1787 aroused grave alarm, and petitions were constantly presented to the national government which went into effect in 1789. Kentucky was admitted as a slave state in 1792, a fugitive slave law was enacted shortly afterwards, and in 1796 Congress promised not to forbid slavery in the territory ceded by North Carolina, and immediately admitted Tennessee as a slave state. In 1798 only twelve votes were cast in Congress to exclude slavery from the territory of Mississippi. In 1803 by the Louisiana Purchase Treaty, Congress agreed to protect slavery in every part of the territory as it then existed. Two years later Congress rejected by a majority of more than two to one a bill to free the slaves in the District of Columbia. In 1807 it did forbid the importation of slaves after January 1, 1808, but in 1812 it admitted Louisiana as a slave state.

With the application of Missouri for statehood trouble began. On February 13, 1819, James Tallmadge of New York moved an amendment prohibiting "the further introduction of slavery or involuntary servitude" and providing that all children born within the state after its admission should be free at the age of twenty-five. The amendment passed the House, but suffered defeat in the Senate. At that time, there were eleven free and eleven

slave states, and Missouri was the first state entirely west of the Mississippi River created from the Louisiana Purchase. By the treaty with France, we had guaranteed the people in the territory "protection of their liberty, property and religion." Because Maine likewise desired admission, Congress coupled the two bills together, dropped the Tallmadge Amendment, and added one framed by Thomas of Illinois to the effect that slavery should be prohibited in the Louisiana territory, except Missouri, north of the line of 36° 30′. In 1821, after she had altered a clause in her constitution prohibiting free negroes from entering the state, Missouri was admitted.

In the year that Missouri entered the union, Benjamin Lundy began to publish the *Genius of Universal Emancipation,* which precipitated a change of policy. Abolitionist societies existed in six southern states—Kentucky, Delaware, Tennessee, North Carolina, Maryland and Virginia —before one was formed in New England. The Colonization Society, a southern organization, during the forty years ending in 1860, had colonized 10,500 negroes in western Africa at a cost of $1,806,000. But growing opposition to slavery caused a crystallization of opinion in the South. William Lloyd Garrison, far more radical than Lundy, began the *Liberator,* January 1, 1831. Shortly thereafter, Nat Turner, a negro lay preacher, able to read and write, led in the murder of over sixty white people in Southampton County, Virginia. The Southerners thereupon demanded the exclusion of abolition literature from the mails and petitions from Congress. Although Jackson and Postmaster-General Amos Kendall seemed to favor the first, Congress in 1836 passed a law carrying a penalty of dismissal, fine, and imprisonment for any postmaster who purposely detained mail. The gag resolution, 1836, however, prevented the reading of slavery petitions in the House and the Senate rejected all petitions so curtly as to have the same effect.

Previous to these high-handed attempts, Abolitionists had been more detested in the North than in the South. It was in the North, Boston, that Garrison had been

dragged through the streets with a rope around his neck on the way to the Common to be tarred and feathered. It was in the North, Cincinnati, that James G. Birney, a former Alabama planter, had his newspaper office sacked and his life endangered. It was in the North, Alton, Illinois, that Elijah P. Lovejoy had his printing press wrecked three times and was himself murdered. It was in the North that negroes in criticism of Abolitionists were put out of cars and coaches, given the corners in churches, and shut out from the schools in contrast to an earlier, more lenient treatment. But, with the increased radicalism of the Southerners, men began first to endure, then to pity, and then to embrace the Abolitionists.

The Liberty Party, formed of practical Abolitionists, began to reveal some strength and in 1844, perhaps, took enough votes from Clay in Michigan and New York to give Polk the election; and in 1848, the Free Soil Party, opposed to the further extension of slavery, won enough New York votes from Lewis Cass to give that state and the election to Taylor.

In 1836, Arkansas entered the union as a slave state and, in 1837, Michigan came in as a free state. In 1845, Florida and Texas were admitted as slave states and, in 1846 and 1848, Iowa and Wisconsin as free states. Many Northerners believed that Southerners deliberately brought about the admission of Texas and the Mexican War in order to obtain more slave territory. One of these, David Wilmot of Pennsylvania, introduced an amendment providing that "neither slavery nor involuntary servitude" should be allowed "in any part" of any territory obtained from Mexico. Jefferson Davis then introduced an amendment to the Oregon bill providing that "nothing should authorize the prohibition of slavery in Oregon so long as it was a territory of the United States." Although both proposals failed, they, nevertheless, drew the lines more closely. With the acquisition of territory from Mexico, the problem increased in intensity. But the Compromise Bill of 1850 brought a temporary lull. California was admitted as a free state, the boundaries of Texas were

reduced and she was given ten million dollars, a new and more stringent fugitive slave law was enacted, the Mexican cession east of California was thrown open to slavery, and the slave trade was abolished in the District of Columbia. For four years, though personal liberty laws in the North and the underground railroad aided the escape of slaves, there was peace or, at least, an armed truce.

But, in 1854, the smoldering flames burst into a blaze to be quenched only by the blood of a million soldiers. The Ostend Manifesto of that year was an attempt to intimidate Spain into selling Cuba. Soulé, Mason, and Buchanan, ministers to Spain, France and England respectively, meeting at Ostend, declared that if Spain refused to sell Cuba for the generous price offered, the United States was "justified by every law, human and divine," in taking the island by force. Luckily, the cautious Marcy disowned the disgraceful Ostend Manifesto, all the more dishonorable because England and France, which had guaranteed Spain's possession of Cuba, were then in the Crimean War. In 1854, too, the Kansas-Nebraska Bill, carried by the impelling oratory of Stephen A. Douglas, repealed the Missouri Compromise and provided that all questions relating to slavery in the territories and states formed from them should be left to their citizens. That bill crystallized Northern opinion. Now Harriet Beecher Stowe's *Uncle Tom's Cabin,* published two years earlier, seemed to hold more truth, personal liberty laws became more common, and to return Anthony Burns to his Virginia owner cost forty thousand dollars. More important eventually, however, was the formation of the Republican Party at Jackson, Michigan, July 6, 1854. Two years later, this party nominated Fremont, winning 114 electoral votes to the 174 of Buchanan, and began the next four years' campaign to the tune of Whittier's battle cry:

> Then sound again the bugles,
> Call the muster-roll anew;
> If months have well-nigh won the field,
> What may not four years do?

The immediate effect of the Kansas-Nebraska Bill was war in Kansas. Northerners were determined to make Kansas free; Southerners were just as determined to make Kansas slave. Aided by the New England Emigrant Aid Society, fanatics, well armed, crossed the prairies to the tune of Whittier's song:

We cross the prairies as of old the pilgrims crossed the sea,
To make the West, as they the East, the homestead of the free!

Lawrence was erected early in 1855, but, armed to the teeth, the Missourians rushed over, March, 1855, and elected a pro-slavery legislature. The Free Soil people, meeting at Topeka, formed an anti-slavery government and asked for admission as a free state. A little later a slave-state sheriff was shot in Lawrence and, on May 21, 1856, the Missourians attacked the town and destroyed the public buildings. Three days later, John Brown with a few followers surprised and murdered in cold blood five slavery men on the banks of Pottawatomie Creek. About the same time, May 20, Charles Sumner made a bitter and coarse attack on Southerners, especially A. P. Butler of South Carolina, then absent because of illness. Two days later, Preston Brooks, a South Carolina representative and a nephew of Butler, almost murdered Sumner with a heavy gutta percha cane. All of these disgraceful affairs happened within a week. But election was approaching and the Democrats obtained a temporary lull.

In 1857, the Free Soil men obtained a majority of the next Kansas legislature. The slavery people then drew up the Lecompton Constitution which protected slavery and offered it to the people for ratification with slavery or without slavery. Because, in either case, owners were guaranteed slaves already there, Free Soil people refused to vote, and so the constitution was adopted. Two weeks later the constitution as a whole was offered to the people and decisively rejected. Buchanan, nevertheless, insisted that Kansas come in as a slave state, a proposition which Douglas courageously opposed. Another vote was taken

and the people again rejected the document, this time by a vote of 11,000 to 2,000. Not until 1861, however, was Kansas admitted as a free state.

The judicial department was likewise friendly to slavery as evidenced in the case of Dred Scott, who had been taken from Missouri to free soil and then brought back to Missouri. Later he, or rather anti-slavery men for him, sued for freedom on the ground that residence on free soil had made him free. The highest court in Missouri decided against him, as did the United States Circuit Court of Missouri when a second suit came up after Scott had been bought by a New Yorker named Sanford. From that court, the case went to the Supreme Court and Chief Justice Roger B. Taney not only upheld the previous courts, but went out of his way to say that the Constitution was meant only for white men, that a negro could not sue in the courts, and that any national law which attempted to protect him in legal rights was unconstitutional.

The next year, 1858, Stephen A. Douglas, at war with the administration and injured by the Panic of 1857, entered the senatorial campaign in Illinois only to encounter the merciless logic of Lincoln. Douglas defended the Dred Scott decision which declared it unconstitutional for the government to forbid slavery in the territories and popular sovereignty under which Congress allowed the territory to decide for itself. How, asked Lincoln, can a territory forbid slavery when Congress can not, for the territory is the creation of Congress? Douglas replied that the Dred Scott decision was negative, whereas legislation by the people of the territory was positive, and could either establish or prohibit slavery. He won the election, but lost the greater one in 1860 to his far-seeing rival.

In October, 1859, John Brown, the misguided fanatic of Kansas notoriety, seized Harper's Ferry and forcibly freed about thirty slaves. He hoped to establish various posts in the mountains and to incite slave revolts. Brown and his little band were captured and Brown was quickly condemned and hanged. The South was justly incited, but rushed into rash demands which amounted to the opening

of all territories to slavery, repeal of personal liberty laws, and the respect of all laws designed to protect slavery.

In 1860, the Democratic Party split, its two main wings nominating Douglas and John C. Breckinridge. The Republican Party passed by its well-known leaders and nominated Lincoln. The Constitutional Union Party, silent on slavery, nominated John Bell, of Tennessee. Although Douglas received only 12 electoral votes (Missouri and New Jersey) to the 39 of Bell (Kentucky, Tennessee, and Virginia), the 72 of Breckinridge (the remainder of the South), and the 180 of Lincoln, he polled more popular votes than Breckinridge and he, with Bell, both union men, had 135,000 more votes in the slaves states than Breckinridge. Lincoln had about 950,000 less popular votes than his opponents combined.

Shortly after the election, in spite of attempts at compromise, South Carolina withdrew from the union, other states followed her example, and soon eleven states were waging a desperate struggle against twice that number. It lasted four years, Lee surrendering to Grant at Appomattox, April 9, 1865. Official records fill 130 large volumes and describe more than two thousand engagements, 150 of which are called "battles."

Negro Labor.—After the war had freed the slaves, they became presumably free laborers, but they have at various times been reduced to a system of peonage. Even in the North the negroes are still condemned to the most menial of tasks, meager pay, and harsh working conditions, and are discriminated against by labor organizations which theoretically declare in favor of equality. In recent years, in spite of opposition, negroes have been entering manufactures in considerable numbers, and they are engaging in agriculture, chiefly in the South.

Indentured Servitude.—In the colonial period the imperative need for labor to clear the ground, cultivate the fields, build roads, erect buildings, and repel hostile natives led to the use of indentured servitude, a form of labor now long practically extinct. Indentured servants were bound to serve for a varying period of years dependent upon age

or the nature of the offense if they were commuted criminals. There were two main classes, voluntary, or those who came here of their own free will, and involuntary, or those who did not.

The first, of whom there were several varieties, allowed the ship captain to sell their services for a period of years in order to pay their passage way to the new country, where, they believed, after a period of service, they could rise to influence if not wealth. At the expiration of their service they often received "a year's provision of corne, dubble apparrell, tooles necessary, and land according to the custome of the Country," as described by John Hammond in *Leah and Rachel: or, the Two Fruitful Sisters, Virginia and Maryland.* Freewillers, that is, those given a certain number of years by the ship master to sell their services, were found in all the colonies, but especially in Pennsylvania and Maryland. Not only farmers and mechanics, but even professional men, like school teachers, came over as indentured servants. Many people too old to work much sold the services of their children for their own passageway as well as for that of the children, who thus had an exceptionally long period of service. When part of the fare was paid, the period of service was shorter. At times some people who were able to pay all the fare, usually six to eight pounds, came as indentured servants in order that they might save their money while they were learning the manners, customs, and language of the country; this practice applied especially to the Germans of Pennsylvania. Some traders found it profitable to sell indentured servants on the markets as well as slaves.

The involuntary indentured servants consisted chiefly of the kidnapped and convicts. Although the kidnapping of individuals was frowned upon by English law, it was tolerated in practice, for the tax rates were lessened or at least did not go so high, most of the kidnapped being the friendless or those likely to become charges on the community. The greed of the unscrupulous and the indifference of the people and authorities thus encouraged spiriting, and the colonists, desirous of labor and as unprincipled

as their English brothers, asked no questions. In addition to the kidnapping of the poor and friendless, troublesome heirs and personal enemies were occasionally overpowered or drugged and carried on board a vessel and brought to America. By 1681 ten thousand persons were annually kidnapped and spirited away from Great Britain. In England during the seventeenth and eighteenth centuries many crimes, three hundred or more, were punishable by the death penalty, but the need of labor in the colonies led to the evasion of the laws. Justices often substituted servitude for death. During the eighteenth century Parliament passed acts which allowed the commutation of death penalties to fourteen years of service in the colonies and of whipping and branding to seven years of servitude. In this way, paupers, debtors, vagrants, "loose or disorderly persons," and criminals came to America on royal order, court sentence, or the order of the judges under English laws; most of these, however, were not hardened criminals, but those unable to pay their debts, political undesirables, and petty offenders.

As in the case of the slaves, treatment depended more or less upon the character of the masters. Some were, of course, mistreated, whipped, and compelled to serve double time if they ran away and were recaptured. At one time Maryland required ten days of work for each day missed and South Carolina twenty-eight. Here we shall merely quote from two contradictory or rather differing reports. John Hammond in *Leah and Rachel: or, the Two Fruitful Sisters, Virginia and Maryland,* wrote:

> Those servants that will be industrious in their time of service gain a competent estate before their Freedomes which is usually done by many, and they gaine esteeme and assistance that appear so industrious; There is no master almost but will allow his servant a parcell of a clear ground to plant some Tobacco in for himself, which he may husband at thos many idle times he hath allowed him and not prejudice, but rejoyce his Master to see it, which in time of Shipping he may lay out for commodities, and in Summer sell them again with advantage, and get a Sowpig or two, which anybody almost will give him, and his Master

suffer him to keep them with his own, which will be no charge to his Master, and with one year's increase of them may purchase a Cow-Calf or two, and by that time he is for himself; he may have Cattle, Hogs and Tobacco of his own, and come to live gallantly; but this must be gained (as I said) by industry and affability, not by sloth nor churlish behavior.[3]

John Hammond wrote shortly prior to 1656. Of course, indentured servants, as slaves and all others, who violated laws, were cruelly treated. It is hard to believe, however, that the treatment described in *Letters from America,* about 1770, was typical. That treatment more often applied to involuntary indentured servants, especially convicts, than to voluntary servants. William Eddis declared:

> They are strained to the utmost to perform their alloted labor; and, from a prepossession in many cases too justly founded, they are supposed to be receiving only the just reward which is due to repeated offences. There are, doubtless, many exceptions to this observation, yet, generally speaking, they groan beneath a worse than Egyptian bondage. By attempting to lighten the intolerable burthen, they often render it more insupportable. For real or imaginary causes, these frequently attempt to escape, but very few are successful; the country being intersected with rivers, and the utmost vigilance observed in detecting persons under suspicious circumstances, who, when apprehended, are committed to close confinement, advertised, and delivered to their respective masters; the party who detects the vagrant being entitled to a reward. Other incidental charges arise. The unhappy culprit is doomed to a severe chastisement; and a prolongation of servitude is decreed in full proportion to expences incurred and supposed inconveniences resulting from a desertion of duty.[4]

The number of indentured servants declined toward the close of the colonial period, but the institution persisted well down into the nineteenth century. It is impossible to calculate the number of indentured servants, but Professor

[3] Force, Peter. *Tracts and Other Papers* [Washington, 1838] Vol. III, No. 14, 14.

[4] Callender, G. S. *Selections from the Economic History of the United States* [Ginn and Company, Boston, 1909] 48.

John R. Commons believes that one-half of all colonial immigrants came in that guise. The very numbers themselves should lessen the shock that may come to some when we note that thousands of people who now move in polite society and are useful citizens are the descendants of colonial indentured servants.

Apprentices.—Akin to indentured servitude in the requirement of work for a given period of time was apprenticeship. The grades of workers were apprentices, journeymen, and masters, following roughly the English custom. The Statute of 1563, which required an apprenticeship of seven years, served as a model for the colonial measures. While the youth was being taught the trade, he received room and board free and sometimes a little spending money. Of course, the time of apprenticeship varied, depending upon age, difficulty of mastering the trade, and the scarcity of labor. In a fairly typical seventeenth century instance a Salem goldsmith indentured an apprentice for twelve years, during which period the boy was to receive his board and clothing and at its close three pounds. Similar indentures were found in Virginia and were sometimes used by magistrates to provide for poor children and orphans. Crèvecœur seemed to think that American mechanics served an apprenticeship even though there were no gilds, but Franklin, speaking especially of Pennsylvania, pointed out that the reason for apprenticeship was the desire to secure a steady supply of labor. Although standards were sometimes relaxed and, as in Europe, apprenticeship was occasionally used for poor relief, the effort on the whole was probably favorable to colonial industry.

Apprenticeship has declined in importance since the colonial period and is seldom thought of now, though examples can still be found in most communities. In the early part of the nineteenth century laborers frequently complained of an abuse formerly common in Europe, namely, the excessive use of apprentices and the limitation of journeymen, or those who worked by the day for a wage. Thus, a writer who signed himself "Candidus" in the

Mechanics' Free Press, November 29, 1828, complained that many masters with fifteen or twenty apprentices seldom or never kept journeymen, with the result that when the period of apprenticeship was over, workmen found themselves unable to obtain employment. Their morals and reputation, he said, were often ruined and their ambition "nipped in the bud."

Free Laborers in Colonies.—From the earliest period free laborers were found in practically all of the colonies, but they were so scarce in the newer communities that labor coöperation and impressment were sometimes practised. When a house was to be built or a barn raised, the neighbors gathered together for the task, which was also a social occasion. While the men in a spirit of emulation were erecting the building the women prepared a good meal. Later on when a man wanted to erect a house, he hired a carpenter or mason for a specified number of days and then worked under his directions. Scarcity of labor and failure of coöperation at times led to the impressment of labor in New England, where legislation occasionally gave constables power to compel artificers and mechanics to leave their crafts and work in the harvest fields of their neighbors.

Wages.—The abundance of land naturally kept wages fairly high, for people would rather work for themselves than for others. During the colonial period wages ranged from the equivalent of fifty cents to a dollar a day. In some cases they went to as high as $1.25. In Pennsylvania, about 1748, according to Peter Kalm, a man servant of ability received sixteen to twenty pounds a year of Pennsylvania currency and servant maids about half as much; both received their food, but they were required to buy their own clothes. Although many people at the beginning of the nineteenth century were working for fifty cents a day or less, this was not always necessary, for land, 1800 to 1820, could be bought for two dollars an acre, with one-fourth down and the balance in three annual installments. F. A. Michaux records wages about 1802 which were exceptional perhaps and obtained only by the better workmen. For instance, cabinetmakers, carpenters, masons, tinmen, tail-

ors, and shoemakers in Charleston and Savannah made two dollars a day; in New York and Philadelphia, a dollar; and in Marietta, Lexington, and Nashville from one dollar to a dollar and a half. In 1840 wages for farm laborers with board ran from eight to twelve dollars a month, and in 1850 from $140 to $150 a year; they were highest, of course, in the West where laborers were scarce. Wages for manufacturing employees increased slightly from 1849

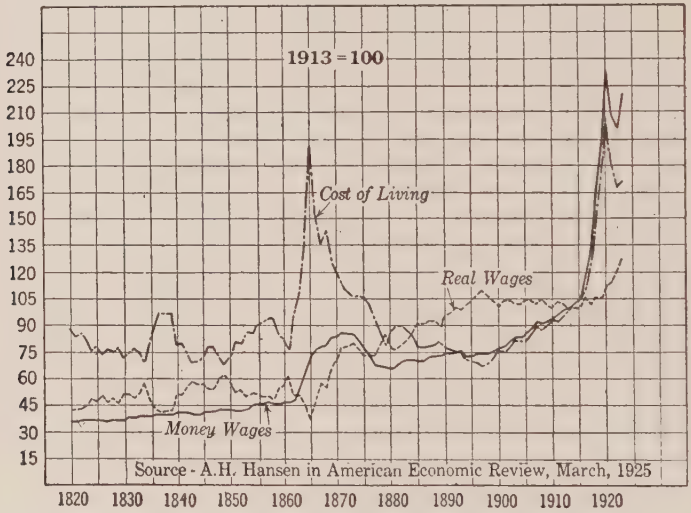

CHART NO. 32. WAGES SINCE 1820.

to 1859, but in the latter year they were only $288.94. Industries which employed many women and children naturally had a lower wage than did those which had smaller numbers. Naturally, also, wages were lowest in the South and highest in the West.

After the Civil War wages of farm laborers varied little up to about 1910. In 1866 the monthly wage with board was $17.45 and in 1879, $10.43. In 1902 the wage was $16.40 and as late as 1914, only $21.05. When the European War began wages rose and in 1920 averaged $47.24, but in 1922 they were down to $29.31. In 1925 they stood

at $33.88. A somewhat similar movement was apparent in manufactures and other industries, that is, rather slight variations up to the outbreak of the war and then rapid increases to the peak in 1920. For instance, the average yearly wage in manufacturing in 1899 was only $426.15 and as late as 1914 only $579.62; in 1919, the average was $1,157.98. It is a safe assumption that practically all wages, except for such professional people as teachers and ministers, doubled, 1914-1919. In 1923 the average for manufacturing industries was slightly higher than in 1919, being about one hundred dollars a month.

Cost of Living.—Not the wage but the purchasing power, however, is the thing that counts; and so we must note briefly the cost of living. In a new country this cost is usually low, for most of the food is home-grown and the clothing not elaborate. Morris Birkbeck referred to the low cost of living and opportunities enjoyed in the West in 1817, a fact sufficiently indicated by the statement that the best board could be obtained for two dollars a week and that daily travelling expenses for a man and horse were only a dollar a day. In 1820 Harvard College students paid only $1.75 a week for board; in 1854, according to Charles Richard Weld, the "young ladies" of Lowell paid only six dollars a month for board and lodging while they earned $3.50 a week. In most parts of the country prior to the Civil War, the real wage was good and poverty was so rare as to excite comment, but this was by foreign travellers and in contrast with home conditions. Charles Augustus Murray, writing about 1836, had not looked well when he declared that in the two years of his travels in America he had been solicited for alms only once. Surely he had not examined city conditions! After the hard times of 1837-1842 conditions grew worse, but if the lot of the city mechanic grew unbearable, he could go west and take up farming land, and this situation lasted until about 1880 and even later. Manufacturers and capitalists were thus restrained in their exactions and the workers were generally far better off than their English cousins.

If we take 1860 as a basic year and call prices then one

hundred, prices rose to 216.8 in 1865, while wages rose to 143.1; real wages thus declined to 66.0. The workmen, nevertheless, soon regained all lost ground, and though a temporary decline occurred, due to the Panic of 1873, as is generally true during panic periods, the prices of 1880 were only three or four per cent above 1860, but the wages were about forty-three per cent higher than in that year. The general movement continued; wages rose to 168.2 in 1890, but prices fell to 95.7. After the Panic of 1893, there was a slight decline in wages, but 1898 saw the beginning of another prosperous period which, in general, lasted until the war. The high point of all commodities, according to *The National City Bank Bulletin* with 1913 as a base year was reached in May, 1920, at 272. According to Professor Irving Fisher, who uses about two hundred representative commodities, the purchasing power of a dollar on the 1913 basis was 40.5 cents in May, 1920; the average for 1926 was 66.1, and for the second week of May, 1927, 71.6. Because the general tendency is for prices to advance more rapidly than wages, many workers undoubtedly suffered much in the period, 1917-1919. But in September, 1919, their lot began to improve and until wage cuts became general in the fall of 1920 they were fairly well off. With wage increases later and falling prices labor's purchasing power was said to be about a third more in September, 1923, than in 1913, and the same statement holds true for 1926.

Hours.—Almost as much emphasized by labor as the wage question is that of hours. In the early period a day's work was from daylight to dark. The English Statute of Apprentices in 1563 set twelve hours as the reasonable time in summer and from daylight to dark in winter, and that was common until the Civil War period. Girls in the Lowell cotton mills worked on the average twelve hours and ten minutes a day in 1846, but in April their day averaged thirteen hours and thirty-one minutes. Of course, this was excessive working time, but even then hours were more favorable than in early English factory labor, as were wages. Mechanics were probably the first in the

field with a demand for a ten-hour day and their demands matched the farmers' "sun to sun" day. President Van Buren's ten-hour order for laborers employed in the public service, issued March 31, 1840, strengthened the movement, and in 1847 New Hampshire adopted such a law for women and Pennsylvania followed suit the next year, but not until 1879 was an enforceable law secured regulating the hours of women. Many other states since then have adopted ten and eight-hour laws. Union labor has secured the eight-hour day in most trades and some employers have voluntarily granted it. In general the tendency of hours has been steadily downward, for public opinion has demanded reduced hours. In 1923 the United States steel industry abolished the abominable twelve-hour system. To be sure, many people work more than eight hours a day, but since 1916 that time has been found on the railroads and is now common in many industries. In 1909 of the workers employed in manufacturing establishments only 7.9 per cent worked forty-eight or less hours per week, but in 1919 the percentage was 60.8. On the other hand, in 1909, 39.2 per cent worked sixty or more hours per week, but in 1919 only 12.1. In New York City at the beginning of 1922 three-fourths of the men and more than three-fourths of the women were employed on an eight-hour basis. In the clothing, fur, shoe, and printing trades the forty-four hour week was general. In the upstate region of New York fifty-four per cent of the men and about half of the women worked eight hours. The time is approaching when the general average will approximate eight hours.

Demands of Labor.—In the period prior to the Civil War labor emphasized numerous demands, most of which have been realized in whole or in part. One of these was the coöperative movement, but unlike the "Rochdale Equitable Pioneers" of England, who began business in 1844 and sold at market prices and then divided the profits in proportion to purchases, the American unions tried to sell at cost. In time, however, the profit-making idea entered and caused division in the ranks. Such organizations are still found in many communities, and labor banks and other

undertakings are not unknown. In 1835 the working men were strongly opposed to the issue of paper money, especially the small bills, because paper money increased the cost of living, for much of it was issued by private banks and was well-nigh worthless. Later on, in the sixties, they favored paper money, for contraction caused loss of work, they believed. Many of the workmen likewise made common cause with various farmers' organizations in the demand for the free and unlimited coinage of silver, 1878-1896. Labor generally opposed the use of children and of women in industry with humanitarian motives in view, but also, it must be admitted, from fear of loss of work and lowered wages. The use of apprentices to the exclusion of journeymen was strongly condemned by many workers as cheap labor, even as negro labor is now often denounced for a similar reason. Of course, labor is very much averse to the employment of prisoners for, in general, goods made in prison walls are sold more cheaply than those made in competition; hence the effect on wages may be bad. In order to protect the wage scale, labor has long insisted that public lands be sold only to actual settlers.

In 1787 perhaps not more than one person in twenty was a voter, for some of the old colonial restrictions relative to church membership and qualifications still applied. Labor consequently early asked and obtained political rights. One of the first demands of the newly enfranchised voters, though often overlooked, was for free schools supported by taxes and this right was speedily obtained. In the early period the body of a debtor as well as his goods could be levied upon and thousands of laborers were imprisoned in filthy jails. In one city as late as 1830 forty cases were recorded where the average debt was less than sixty cents each. In 1831 New York abolished imprisonment for debt except in fraud cases, and by 1840 practically all other northern states had done likewise.

So, too, as a creditor the workman was often injured, for he was sometimes paid in store orders and charged high prices for inferior articles, a practice which, unfortunately, is still occasionally found. If the workers refused to ac-

cept the orders, they immediately lost their jobs according to the working of the abominable trucking system introduced by Samuel Slater at Providence. If the employer did not have a store, he would frequently send his workers to a friend who paid him a commission. Occasionally workmen were forced to accept the product made or orders which were not good for groceries or flour, commonly considered cash articles, and so they had to submit to further losses. The mechanics' lien law, holding property as security for work rendered, was at first good only for the master, but one of the first accomplishments of the Working Men's Party in New York was a lien law not alone for the contractor, but for the journeyman and laborer as well. Other states followed New York's example. The workers prior to the Civil War were strongly opposed to the system of compulsory militia service because that system offered to rich and poor the choice of fine or imprisonment if they failed to attend drill and parade "at their own expense for arms and accoutrement." The wealthy paid, but the poor often went to prison.

Other rights, to be sure, were urged in the period prior to the Civil War and in more recent times. Equal taxation, more equality before the law through decreased expenses of legal procedure, no laws relative to religion, denunciation of banks and other chartered monopolies were among the points emphasized. At the present time the unionization of all organizable labor, the light wines and beer amendment, greater voice in the management of industry, and the restriction or prohibition of all immigration are among the objects of labor not hitherto discussed.

Women in Industry.—Women have long been employed in various industries, but the traditional occupation of the early period was housekeeping. Domestic servants and female slaves came here in the colonial period, but they were seldom used in the fields save in case they were refractory. With the coming of the factory system many young women found work, especially in the textile establishments. Estimates, possibly excessive, state that by 1860 about one-third of the employees in New England

manufacturing establishments were females and for the country as a whole about one-fifth. In some manufactures, the percentage was still higher, as it is now; for instance, in cotton, hosiery, and men's clothing nearly two-thirds of the employees were females. Domestic servants in the period shortly prior to the Civil War received with board from seventy-eight cents in Mexico and eighty in Pennsylvania to as high as thirteen dollars in California and ten in Oregon by the week. Women's wages have increased since the war and especially in the last ten or fifteen years, but they are still low in comparison with those of men, even when equal work is performed. Among the reasons for the lower wage given to women than to men are: weakness, greater liability to sickness, limitation to few occupations, more marked immobility of labor, help accorded by relatives, desire of fairly well-to-do to earn pin money, temporary character of labor, lack of efficient organization, long established custom of lower pay, little influence exercised through the ballot until lately, gratitude to an employer which often caused them to turn down better positions, and necessity.

In 1905 there were only four times as many male as female wage-earners in manufacturing, but their wage was seven and a half times as much. Six years later, according to Professor Scott Nearing, nineteen-twentieths of the women in the northern and eastern parts of the United States made less than $601 a year. Wages did not increase sufficiently during the war, and, according to the *Monthly Labor Review*, December, 1920, an investigation in forty cities in Texas showed for 2,028 women with the average weekly wage of 13,311 employees an average cost of living of $14.78 and a wage of $11.98. These girls were found in telephone, mercantile, laundry, and factory pursuits. Investigations in northern cities reveal a higher weekly wage at times, but also a high cost of living. This low wage is, of course, a rather important cause of immorality.

In the schedules of the Twelfth Census, 1900, 303 separate employments were enumerated and women were work-

ing in all except the following eight: as soldiers, sailors, marines, street car conductors, firemen of municipal fire departments, apprentices and helpers to roofers and slaters, helpers to steam boiler makers, and helpers to brass workers. Two occupations in which women were entered in large numbers showed a marked decrease, 1910-1920, namely, agriculture, forestry, and animal husbandry on one side, and domestic and personal service on the other. Women employed in transportation and clerical occupations more than doubled during the decade. So, too, in the other groups the tendency was upward. When the men went to the war, women took their places. Early in 1919 perhaps eleven million women were employed. During the war the number of women engaged in manufactures increased by a third. Those who were especially drawn into industrial pursuits were domestic servants, teachers, and relatives of soldiers. Many women entered clerical occupations, transportation, and trade, but the main occupations opened up by the war were machine shop work in munition plants, automobile factories, and railway shops. Some were employed as "conductorettes" on street railways, as passenger elevator operators, and as ushers and doorkeepers. Women generally succeeded in rubber, electrical, leather, and metal working trades, but as a rule met with less success in rough or dirty work unless, indeed, they liked it.

Organized labor, as previously noted, looks with disfavor on women in industry, for in the words of Samuel Gompers in 1906, it believes "that the wife or mother, attending to the duties of the home, makes the greatest contribution to the support of the family." More than twelve years later, July, 1918, Gompers declared: "As it is necessary for women of the United States to come into industry in increasing numbers, they must organize." More helpful to women in industry than organized labor are the legislative and executive bodies, for laws are enacted prohibiting women from entering certain employments, working at night, restricting hours of work, laboring just before or after child-birth, etc., and these laws

are generally upheld by the courts as a proper exercise of the police power.

Child Labor.—During the colonial period many children were brought here as indentured servants and slave children were employed at tasks suitable to their strength. Samuel Slater, who introduced English machines, also brought in child labor in textile manufactures. His first nine employees were seven boys and two girls under twelve years of age, engaged "because they were both deft and cheap." At Lowell, contrary to the practice in Providence and vicinity, children were seldom employed because the founders opposed their employment on principle and because they were not profitable, as they were in the older neighborhood of Providence where the burden of support could be thrown upon the parents.

Although the hours were not so long as in England, or the treatment so bad, pay was low, from fifty cents a week to four or five times that amount, dependent upon age, ability, demand, and supply. And hours were excessive, as even those who believe in child labor will now admit. A labor missive in the *Mechanics' Free Press,* of Philadelphia, August 21, 1830, declared in part:

> . . . It is a well known fact that the principal part of the help in cotton factories consists of boys and girls, we may safely say from six to seventeen years of age, and are confined to steady employment during the longest days in the year from daylight until dark, allowing at the outside, one hour and a half per day. In consequence of this close confinement, it renders it entirely impossible for the parents of such children to obtain for them any education or knowledge, save that of working that machine, which they are compelled to work, and that too with a small sum, that is hardly sufficient to support nature, while they on the other hand are rolling in wealth, of the vitals of these poor children every day. . . .[5]

The first fairly adequate statistics relative to child labor were not compiled until 1870, at which time 739,164 chil-

[5] See Commons, J. R. *Documentary History of American Industrial Society* [The Arthur H. Clark Company, Publishers, Cleveland, Ohio, 10 Volumes, 1910-1911] Vol. V, 61, 62.

dren between ten and fifteen were reported employed in gainful occupations, almost a sixth in manufactures. Thirty years later the number was 1,750,178, of whom 60.2 per cent were in agricultural pursuits. Children under ten were not considered, and the figures were incomplete. Conditions under which the labor was performed varied, but boys in the heated buildings of the glass-bottle industry, in the dusty coal breakers of Pennsylvania, and in the busy canneries all suffered; growth was stunted and immorality increased, as in the case of the textile industries, the night messenger service, and practically all occupations open to children. John Spargo in his *Bitter Cry of the Children* tells of cigar factories in New Jersey and Pennsylvania which were called "kindergartens" on account of the large number of children employed. In New York he found children six and seven years of age canning vegetables at two o'clock in the morning. Labor laws of the states were not enforced and in the South, where conditions were the worst, only one state, North Carolina, had a labor commission. At Augusta, Georgia, an investigator found 556 children under twelve years at work in eight cotton mills. Their lack of protection is apparent from the fact that one physician testified that he had amputated the fingers of more than a hundred children whose hands had been caught in the cotton-mill machinery.

By 1910 the number of bread winners ten to fifteen years of age had increased to 1,990,225, but in 1920, because of restrictive legislation, it was down to 1,060,858, nearly two-thirds of whom were in agriculture. The European War, nevertheless, caused a large temporary increase, as did court decisions declaring national labor laws unconstitutional. Many young children of Kentucky and other states toil in the tobacco fields, of the Imperial Valley of California and other places in the South in the cotton fields, of Michigan and Colorado in the beet fields, of Massachusetts in the cranberry swamps, and of numerous states in truck gardens. Many all over the country are found doing home work in manufactures. For instance, a recent

Providence and Pawtucket survey showed that twenty-one industries used home work as a part of their system of production, and children five to nine years of age were found working in the jewelry trade. Available studies indicate that from a third to three-fourths of all children employed are retarded in their school work or stunted or deformed in body, depending upon the nature of their work. If all occupations are considered, the proportion of child labor in the South is higher than in any other section; if non-agricultural occupations are considered, the proportion is higher for New England, the Middle Atlantic States, and the East North Central Group, than for any of the three southern divisions. Rhode Island has the largest proportion of children at work in industry and manufacturing. From 1910 to 1920 the most marked decrease, sixty per cent, occurred in mining, in spite of the fact that all employees increased thirteen per cent. In mills and factories, save in five states—Rhode Island, Massachusetts, Connecticut, New Jersey, and Washington—decreases of forty to sixty per cent occurred. On the whole, then, conditions of child labor seem to be improving, especially in hours, wages, conditions of work, etc. Child labor will and should be reduced to a negligible minimum in the United States as well as in other countries.

Foreign Laborers.—In other connections mention has been made of the negro and of the foreigner in industry. Here we shall merely note that government commissions have shown that about one-fourth to one-half of the labor force in our basic industries is foreign-born, that if the foreign-born and their children should be taken out of our largest cities those cities would fall to about a third of their present population, that the loss would handicap, if not ruin, many essential industries. By the use of cheap foreign labor industries have developed more rapidly than would have otherwise been the case, though the general tendency has been, some people think, to eliminate the native-born from those occupations in which the aliens entered in largest numbers, and to aggravate unemployment. This belief has been partly responsible for the oppo-

sition of organized labor, previously mentioned, to immigration.

Early Labor Organizations.—In the early period of our history labor did not organize to any extent, though attempts were made by numerous local bodies prior to the Civil War and even on a national scale. Later with improved transportation and communication facilities,

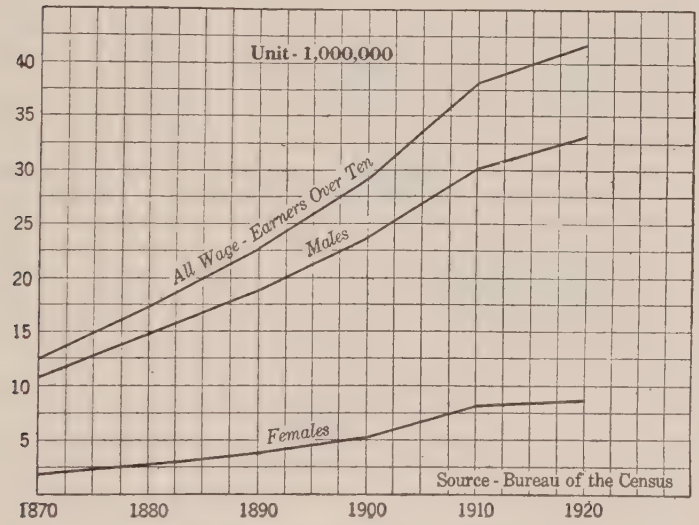

CHART NO. 33. GROWTH OF WAGE-EARNERS.

growing class consciousness, intensification of the factory system, and a marked development in number of wage earners, who increased about fourfold, 1870-1920, organization became easier.

Printers in New York were organized in 1786 and the cordwainers in Philadelphia in 1794. In 1793 the Savannah Association of Mechanics was formed and about a year later the Mechanical Society of Augusta. In 1802 the Savannah House Carpenters were incorporated. Numerous other organizations were likewise formed in other cities. The period, 1820 to 1840, was called by Professor J. R. Com-

mons "the awakening period of the American labor movement." Professor E. L. Bogart believes that the real labor movement did not begin until 1827, when the Mechanics' Union of Trade Associations was organized in Philadelphia. Of this union the earliest American labor paper, the *Mechanics' Free Press* of Philadelphia declared: "This is the first time that the working men have attempted in a

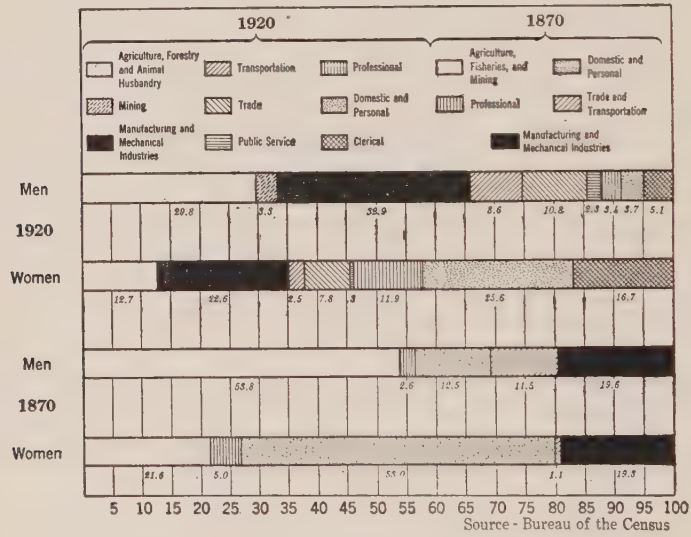

Chart No. 34. Distribution of Wage-earners.

public meeting, to inquire whether they possess as individuals or as a class, any right to say by whom they shall be governed." [6]

Although this union proved temporary, 1834 saw the formation of an important national trade union, which brought together delegates of local trade unions from points as distant as Boston, Washington, and Cincinnati. At that time 26,250 members of trade unions were reported. The object of the union was to promote the moral, intellectual, and financial interests of the members, to disseminate

[6] *Loc. cit.*, Vol. V, 21.

information, to increase trade unions, to harmonize the efforts of the laborers, and in general to realize the demands previously stated. By 1836, according to Professor F. T. Carlton, at least five trades had national unions: cordwainers, combmakers, carpenters, weavers, and printers. The national union, after three general conventions, disappeared in the Panic of 1837. Various protective unions formed in the period just prior to the Civil War to lessen the cost of living for the workmen have already been noted.

The International Typographical Union dates from 1850 when the journeymen printers held a national convention at New York; in 1869 the word "International" was substituted for "National" in order to include Canadian members. According to C. D. Wright the printers' union is the oldest existing one in the United States. In 1854 the hat finishers formed a national trade association and five years later the Iron Molders' Union of North America and the Mechanics' and Blacksmiths' Union were organized. The Brotherhood of Locomotive Engineers had its beginning in the "Brotherhood of the Footboard," which was formed at Detroit in 1863. Other tradesmen, such as railway conductors, bricklayers, cigar makers, granite workers, horseshoers, and iron and steel workers were quickly organized and by 1870 the movement had progressed until there were about forty national trade unions in the United States. Others soon came.

One of the most famous of these early organizations was the Knights of St. Crispin, who owed their origin chiefly to three things: rising prices, introduction of new machinery, and the use of unskilled labor by employers. The order was first organized in 1867 and spread rapidly in eastern cities, where for a time it exercised considerable influence. At the maximum of its power it had a membership of about forty thousand, or about four times as many as any other organization in the country. The St. Crispins, or shoemakers, used the strike and urged coöperation. The order disappeared soon after the Panic of 1873.

A National Labor Congress was held in Baltimore in 1867 and for several successive years in other important

cities. The demands urged were: the eight-hour day, land grants to actual settlers only, a national labor bureau, immigration restrictions, tariff reductions on the necessities of life, the abolition of prison labor, and the establishment of mechanics' institutes, reading rooms for workers and coöperative stores and workshops. It pledged aid to women workers and attacked bad housing conditions and the national banking system. The union, according to Professor R. T. Ely, died "from the disease known as politics." At one time it wielded considerable political power and elected representatives to several state legislatures. The membership at the peak was estimated at about 600,000, a record for that time.

Knights of Labor.—The Knights of Labor was formed by U. S. Stevens, a Philadelphia tailor, in 1869. The first local assembly was composed entirely of garment workers and the intention apparently was to form a union in their interests alone, but before a year had passed a man not a garment worker was admitted and in a little while the idea of trade unionism gave way to the desire of uniting all workers into one central union. Among the classes excluded were those employed in making or selling intoxicating liquors, bankers, professional gamblers, and lawyers. The first general assembly was held in 1878, at which time the membership was reported at 80,000. Growth was gradual until 1885 when the number reached 100,000. The next year, July, 1886, about 703,000 acknowledged the general assembly, but relapse soon followed. Over-organization, strikes, political entanglements, costly coöperative experiments, disputes with trade unions, and internal dissensions, as well as the growing popularity of federation, hastened the fall. Among the demands of the Knights were: better working conditions, the referendum, a bureau of labor statistics, the occupation and use of the land as the only valid title, prohibition of child labor, graduated income and inheritance taxes, a postal savings bank system, government ownership of railways and telegraphs, coöperation to take the place of the wage system, arbitration of labor disputes, and the introduction of the eight-hour day.

American Federation of Labor.—The American Federation of Labor, formed in 1881, was another great effort to unite all wage earners into a single organization. It differed from the Knights of Labor in several important respects. First, according to the *Final Report of the Industrial Commission*, the Federation was "distinctly an organization of wage-earners," whereas "the Knights desired to

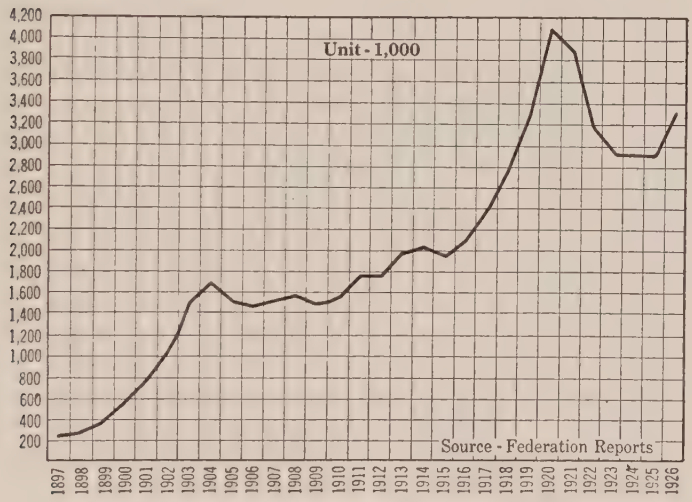

CHART NO. 35. AVERAGE PAID-UP MEMBERSHIP OF THE AMERICAN FEDERATION OF LABOR.

include all productive workers, whether or not they received their compensation in the form of wages." Second, as the name implies, the Federation was based "on that principle of alliance, and union for certain purposes, of independent minor republics, upon which the union of the American States proceeded," and the officials exercised little power in comparison with those of the "republic, one and indivisible, of the Knights." Third, the Federation, in theory, was opposed to political activity, whereas the Knights employed politics to gain their ends. Fourth, in the early period of its history the Federation made no

attempt to establish coöperative enterprises; the Knights had favored them. Fifth, the Federation has consistently declared the strike, the boycott, and the unfair list legitimate weapons, though in general it has not commanded them, whereas, theoretically at least, the Knights were opposed to the strike. The objects of the Federation were the same as those of other organizations, namely, to better in various ways the economic condition of its members.

By 1890 the paid-up membership of the Federation was about 190,000, in 1900 three times as many, and thereafter as shown by graph. Numerous fluctuations, of course, occurred due to variations of hard and prosperous times; depression decreased membership and prosperity increased it. From 1920 to 1925 membership decreased. Other unions in 1923 ran the total up to 3,731,372, or twenty-four per cent less than the total in 1920 and only twenty per cent of the organizable workers as compared with twenty-eight in 1920. Various organizations have recently become affiliated with the American Federation, though among others still outside of its ranks are: Amalgamated Clothing Workers of America, the Amalgamated Textile Workers, the Industrial Workers of the World, the Locomotive Engineers, the Railway Conductors, the Locomotive Firemen and Engineers, and the Brotherhood of Railway Trainmen.

In 1925 there were 107 national and international unions, 831 city central bodies, and 49 state federations, including the District of Columbia, and 29,417 local unions, as compared with 36,247 in 1921. The basic unit is the local union which consists of members who live and work in one town; it must be affiliated with the national union in its trade. The local union is urged, but not required, to join the central labor union of its city or town and also its state union. National trade unions and state federations are affiliated with the American Federation of Labor. If no national union in a certain trade exists, the local union can be affiliated directly with the American Federation. The "federal labor union" is a mixed local union, formed only when locals are impracticable through lack of members; it

is a "recruiting station" and is directly connected with the Federation. State federations are intended to secure favorable legislation, but they cannot call a strike; city central unions exist for a similar reason, but they cannot call a strike until proper authority has been secured from higher organizations. At the general convention each national union has one delegate for every four thousand paid-up members, or fraction thereof. State federations, city central unions, federal labor unions, and locals outside of a national union are allowed one delegate each. A president, eight vice-presidents, a secretary, and a treasurer are elected for one year by the convention and form the executive council. The specific aims of the Federation are: shorter working days, higher wages, more favorable legislation, and higher standards of living. They are to be realized through the strike and boycott. Unions attempt to surround their work with numerous safeguards and to make rules which relate to the nature of day and piece work, holidays, overtime, hours, relations of union and non-union men, and the use of non-union material. They are strongly in favor of the closed shop and collective bargaining and favor voluntary arbitration, limitation of apprenticeship, and the sympathetic strike.

Industrial Workers of the World.—Very brief mention will be made of two other organizations, the Industrial Workers of the World, and the Amalgamated Clothing Workers of America. The former was organized in 1905 and in recent years has had a membership of approximately 100,000, though 1926 estimates place it at 30,000. In organization it resembles the Knights of Labor more than the American Federation of Labor. The government of the Industrial Workers of the World is highly centralized under the control of the annual convention and an executive board, subject, nevertheless, to a referendum. The executive board or convention can order a strike and call out unions. Craft lines are wiped out, and, as noted by Professor F. T. Carlton, the sewing-machine industry would include wood-workers, machinists, coremakers, molders, etc., grouped into an industrial union, several of which may be

grouped into a district council or department. Functions of these unions are administrative and both are subordinate to the annual convention and general executive board. Local dues are low. The I. W. W. is an inevitable result of economic depression and the negation of the opportunities and incentives to a worthwhile life; hence the citizen who would show his patriotism should seek to remove the causes rather than curse the result. The I. W. W.'s, in common with their European brothers, favor the use of the general strike, the complete tying up of business, sabotage, and general violence, for only thus, these radicals believe, can they force justice or even a hearing for their claims. The One Big Union, formed in Canada, like the moderate wing of the I. W. W., is more reasonable and in the temperate words of Professor M. D. Savage, "condemns all use of sabotage and violence to hasten the coming of the new day."

Amalgamated Clothing Workers.—The Amalgamated Clothing Workers of America, one of the most powerful of the independent unions, really began in the men's clothing industry in 1891, but did not leave the United Garment Workers and the American Federation until 1914. Six years later it had a membership of about 177,000. Idealism, good leadership, restriction of immigration, general labor shortage, and democratic spirit have promoted its growth. Officers are chosen by a referendum vote after nomination by a convention, and other vital questions are referred to the general membership. Locals are usually composed of workers in a single craft, as for instance, cutters, pressers, tailors, etc., though all may be united in smaller communities. Power over strikes and agreements lies in the hands of joint boards which are composed of representatives of the different city or trade units. General strikes must have the sanction of the general executive board. The smallest unit is the shop, each of which has an unpaid chairman elected by the members and a shop committee, which act as channels of information and decide local disputes. In large shops separate crafts may secure sub-chairmen. The Amalgamated believes in collective agreements, conciliation, and

the fulfillment of all promises. It is probably the most progressive union in the country.

Employers' Organizations.—The organization of labor hastened the organization of employers. One of the earliest of these organizations was the Iron Founders' and Machine Builders' Association of the Falls of the Ohio, September 3, 1863. A little later employers organized to resist the St. Crispins and other labor organizations. Perhaps the Stove Founders' National Defense Association, 1886, was the first attempt on a national scale. Employers in stove and furnace manufacturing, metal foundry work, transportation on the Great Lakes, construction of machines, publishing and printing, marble cutting, ready-made clothing, and others have organized. Since 1895, the National Association of Manufacturers, corresponding roughly to the American Federation of Labor, has existed. Employers' associations seemed to see in labor unions a menace, and various ones of a militant nature united in 1903 in a federated "Citizens' Industrial Association of America," which, unless the public can secure its own protection, may lead to many bitter wars with militant labor.

Strikes.—One of the results of organized labor and capital has been strikes, which have been known from the foundation of the national government, if not earlier. Prior to the Panic of 1873, however, they were few in number. In 1890, the high point of the nineteenth century, 1,897 strikes and lockouts occurred; for the last twenty years of that century 23,798 strikes and lockouts occurred, affecting 127,442 establishments and 6,610,001 men; 35.0 per cent of the employees involved were successful, 16.7 partially so, and 48.3 failed. In the next century disputes were more marked than ever. In 1917 the number was 4,450 and though the tendency has been downward since then, the 1,039 disputes of 1922 included two which involved about 1,000,000 men, the coal strike about 600,000 and the rail strike about 400,000. Most of the strikes related to wages, hours, working conditions, recognition of the union, and the like.

The Baltimore and Ohio Strike in 1877 was the first of

the important strikes. It came because of a ten per cent wage reduction, irregular work, increased train tonnage, and unsatisfactory methods of pay. Violence occurred in Martinsburg, Cumberland, and Baltimore, and Federal troops had to be employed. The strike spread to the Pennsylvania lines and other railroads; the Pennsylvania Railroad Company had 1,600 freight and passenger cars, 125 locomotives, and the railroad shops at Pittsburgh destroyed by fire before Federal troops reached the city. Later it collected about $3,500,000 in damages from Allegheny County because the officials had not provided adequate protection. Twenty-five people lost their lives. The employees of the Gould system in the Southwest struck in 1885 because of a wage reduction and won, but a year later when they struck again because of the discharge of an incompetent foreman who happened to be an influential member of the Knights of Labor, they lost and gave that organization a mortal wound. In 1894 the employees of the Pullman Palace Car Company of Chicago struck because of a wage reduction. They received support from the American Railway Union which ordered a boycott of Pullman cars; violence occurred, railway traffic was well-nigh suspended, Federal troops were called out, and the strike collapsed.

Efforts made in Chicago in 1886 to secure an eight-hour day led to the Haymarket Square Riot in which eight policemen were killed and several injured by a bomb which was thrown into the ranks of charging police when they attempted to disperse a mob at the McCormick Reaper Works which were then being run by non-union labor. In 1892, another famous strike occurred, this time at Homestead, Pennsylvania, where the Carnegie Steel Company announced a reduction of wages for some of its employees. The company stated its intention of running the mills with non-union labor, but the workers seized the plant and later captured three hundred Pinkerton detectives who had been hired to drive them out. Not until the entire state militia, some eight thousand in number, were called out were the strikers ejected and activities resumed with non-union labor.

Many important labor disturbances have occurred in this century, among which those in the coal industry are the most important. In 1902 an anthracite strike was settled through the agency of President Roosevelt. The miners resumed work on the old scale, but the next spring received a ten per cent increase. Violence was marked in the Cripple Creek Coal Strike of 1903-1904 in Colorado, and out of the violence of that strike the I. W. W. was born. In 1913 and 1914 violence again occurred in the coal regions of Colorado. In the fall of 1919, 435,000 bituminous coal miners went on a strike and eventually gained an immediate increase of fourteen per cent in wages. In 1922 strikes in both bituminous and anthracite coal industries occurred. The former was marked by violence, especially in West Virginia and Illinois. Both groups of strikers succeeded in resisting wage reductions. In 1923 the anthracite miners by another strike succeeded in obtaining a ten per cent increase in pay. On September 1, 1925, they went out on another strike, but failed after 170 days of idleness. Early in 1924 the wage scale in the bituminous mines was extended for three additional years, but a strike came in 1927 with the expiration of the contract. Miners and mines are far too numerous in the coal industry, which, if run at full capacity, would produce twice as much coal as the country could consume or export. Perhaps a third or more of the mines should be closed and a third or more of the miners enter other occupations; all would be better off in the long run and the cost to the public would be infinitely less.

In the winter of 1909-1910 the "first great woman's strike" occurred in New York City. The thirty thousand poor Jewish, Italian, and American girls in the shirtwaist trades were aided by the Women's Trade Union League, certain wealthy women, and young college girls. Eventually they gained practically everything demanded. In 1913 about three thousand migratory hop pickers of California encamped on one ranch struck against intolerable sanitary conditions and the trucking system. A sheriff's posse was called and bloodshed resulted. In 1919 the steel workers demanded collective bargaining, an eight-hour day,

a six-day week, and the abolition of the twenty-four hour shift, but after a one-sided struggle of three and a half months they were compelled to acknowledge defeat. In 1922 textile workers struck against wage reductions of twenty per cent shortly after they had submitted to reductions of twenty-two and a half per cent, and, after five or six months of idleness, they went back to work at the old scale. In 1922 railroad laborers struck against wage reductions, but after a strike marked by considerable violence and bloodshed they went back to work at the wages against which they had struck and with the seniority question, or ranking among employees which entitled them to certain privileges as being laid off the job last and taken back first, still unsettled.

Arbitration and Conciliation.—The numerous demands of labor and capital and the hardships upon the public as well as upon themselves which result from industrial warfare have led to attempts at conciliation and arbitration and to legislation to lighten working conditions. In 1901 the National Civic Federation was formed to develop coöperation among the employers, the employees, and the general public. Arbitration was attempted by the national government in 1888 in interstate commerce, by the Erdman Act of 1898, and by the Newlands Act of 1913. In 1920 an elaborate arrangement of shop committees in which both employers and employees were to be represented was recommended by the Industrial Commission for single industrial establishments. To settle other disputes a national industrial board, local regional conferences, and boards of inquiry were recommended, but the arrangement is not compulsory. In connection with transportation the Railroad Labor Board is noted. The type of arbitration, however, that the country will favor when suffering becomes unbearable is that of the Kansas Industrial Court of 1920, which has power to decide industrial disputes, order employers and employees to work, and if necessary take over and run industries which prove disobedient and wilful, and to jail refractory individuals. An amendment to the Federal Constitution may be necessary, for the Supreme Court held

in 1923 in a packing house case that "the Industrial Court Act, in so far as it permits the fixing of wages is in conflict with the Fourteenth Amendment" and in 1925 that compulsory arbitration and the fixing of hours by state commissions were unconstitutional. Boards of conciliation, to be sure, try to prevent disputes from arising or settle them without assistance from outside sources; boards of arbitration settle difficulties that have been referred to them by the employers or employees.

Unemployment Insurance.—Good treatment, decent wages, sanitary working quarters, welfare work, the use of bonuses, and voluntary insurance, such as old age, unemployment, etc., tend to make labor more satisfied and lessen troubles. Possibly the most notable experiment is that recently adopted by the Amalgamated Clothing Workers and their employers, and effective from January 1, 1924 to April 30, 1925. It has been renewed and seems to be successful. The workers pay to a fund jointly administered one and a half per cent of their earnings and the employers pay an equal amount. Benefits equal two-fifths of the weekly wage, the maximum being twenty dollars, and are only for those who are involuntarily unemployed and have been in the service a year.

Legislation and Judicial Interpretation.—Labor legislation prior to the Civil War has already been noted in part. It related chiefly to the securing of certain demands, the ten-hour day, and the prohibition of child labor. During the last two-fifths of the nineteenth century laws to protect the health and safety of labor in factories, workshops, mercantile establishments, sweatshops, bakeries, laundries, building construction, etc., were enacted and inspection provided for. Factory laws in general related first to the protection of health by regulations concerning ventilation, lighting, heating, sanitation, etc.; second, to the prevention of accidents by prohibiting the employment of women and children to clean machinery in operation and do other dangerous work; third, to the regulation of hours of labor, the prohibition of night work, and the provision of intervals of rest during the working day for women and children.

Practically all of the states producing minerals had, by 1900, mining laws, which attempted to secure safety devices and to regulate hours of labor. Railway labor laws regulated the employment of certain classes, forbade certain acts of railway employees, attempted to secure mechanical equipment for protection and safety, and set conditions relative to the reporting of accidents. Laws for women prohibited employment in certain occupations such as the mines, barrooms, smelting and refining works, limited hours of work, set sanitary and moral conditions, and forbade or restricted night work. Laws for children generally fixed an age limit from ten to sixteen, forbade employment during school hours, and kept children out of dangerous or immoral occupations.

In 1866 Massachusetts passed a child labor law, established a state bureau of labor, and a little later a ten-hour law for women and children, and a factory inspection act. Other states followed the Massachusetts model and by 1900 several states had set eight hours as a legal day's work unless otherwise stipulated. Others provided for a ten-hour day. In 1892 the Federal law placed eight hours as the working day of all employees in government work, but the courts in their interpretation refused to include government work let out to private concerns. Many states also prohibited Sunday work. Ordinarily courts threw out laws which attempted to regulate hours of work for men; thus, the Illinois Supreme Court in 1895 had held that laws limiting the hours of women workers and therefore males were in violation of the fourteenth amendment. In 1898, nevertheless, the United States Supreme Court in the case of *Holden v. Hardy* upheld the Utah act which set eight hours as the length of employment in all underground mining work, unless emergency came in, and this decision strengthened the state legislation, even though somewhat similar laws were later set aside.

Legislation in the twentieth century followed in part the trend at the close of the nineteenth. Now more than half of the states and many of the cities have eight-hour provisions. In 1912 the eight-hour day was applied by the

government to mechanics and laborers with some exceptions and in 1916 the Adamson Law made eight hours the "basic working day" for railroad employees. Over seven-eighths of the states now have laws which limit the hours by the day or week that a woman may work. These laws are not always inclusive, but apply only to specified occupations. An increasing number of states prohibit employment of women for a short peroid prior to or after childbirth; for example, the Missouri law of 1919 makes the period three weeks both before and after childbirth. Minimum wage laws have also been enacted. The growth in child labor legislation is apparent from the following statements: from 1904 to 1922 the number of states which have an eight-hour day for children under sixteen increased from one to thirty-two, those which have a fourteen-year age limit from thirteen to forty-five, and those which prohibit night work under sixteen from five to forty-two. Compulsory school attendance laws have also increased.

Child Labor Laws and Court Decisions.—The national child labor law passed in 1916 and effective September 1, 1917, prohibited the shipment in foreign and interstate commerce of goods produced in factories and canneries, which in the thirty days prior to the shipment of such goods had employed children under fourteen years of age, or between fourteen and sixteen for more than eight hours a day or six days in the week or later than seven at night or earlier than six in the morning. Similar restrictions applied to the shipment of any article produced by any mine or quarry employing children under sixteen. Although nearly seven-eighths of the children were not covered by this law, many people felt a distinct shock when, only 273 days after it became effective, it was declared unconstitutional by the Supreme Court on the ground that the interstate commerce clause of the act could not be invoked to stop child labor in the different states. In an attempt to achieve the same end and stop the growth of child labor the Act of 1919, similar to the old measure, except that taxation rather than prohibition was attempted, imposed an excise tax of ten per cent on the net profits of the establishments

violating the law. But in May, 1922, the Supreme Court declared the law unconstitutional as an attempt by Congress through its taxing power to regulate a matter pertaining to the police power of the respective states. Courts have also declared laws unconstitutional as, for example, those relative to the discharge or employment of men because of union membership.

In 1917 the Supreme Court of the United States upheld an Oregon law limiting hours of work to ten, thereby reversing without mention a New York bakery case. In general, court decisions uphold the restriction of hours for women. Such was the action taken by Massachusetts in 1876, by Nebraska and Washington in 1902, by Oregon in 1906, and by Illinois and Michigan in 1910 in reversal of earlier decisions. In 1907 a New York law which forbade night work to women was held unconstitutional, but a somewhat similar law enacted in 1913 was upheld two years later. Unfortunately, a backward step was taken in 1923 when the Supreme Court held that the minimum wage law regulating wages for women in the District of Columbia was unconstitutional. An amendment must be adopted, apparently, in order to protect our women and children. State courts generally recognize the use of the police power to save the children, though as already noted the Supreme Court is hostile to the methods attempted by Congress.

In 1915 the United Hatters of North America, after a long struggle, were held responsible for $225,130 damages assessed against 186 people in the union for the boycott of a Danbury, Connecticut, hat firm. In 1907 and 1908 the unfair list was denied to labor and in 1922 in the *United Mine Workers of America v. Coronado Coal Company* the Supreme Court decided that labor organizations, even if unincorporated, could be sued for violating the Sherman Anti-Trust Law.

Social Insurance.—A type of legislation growing in favor in recent years is social insurance, especially workmen's compensation. Maryland made a poor beginning in 1902 and not until 1911 were the first laws effective. The national government, Hawaii, Porto Rico, and all of the states

except Arkansas, Mississippi, North Carolina, South Carolina, and Florida have compensation laws. In general all labor except farm and domestic are covered, medical care is provided, compensation is fixed at half to two-thirds of the wage, and provision is made for burial expenses and survivors. In about six-sevenths of the states compensation is made certain by requiring employers to insure their risks. In 1917 the United States Supreme Court held that the New York and Washington compensation laws were constitutional and will probably continue to regard similar measures as reasonable extensions of the police power.

Although practically all of the countries of western Europe have enacted health insurance laws for their industrial workers, few attempts have been made here. The pensioning system, however, seems to be growing in favor, for Federal and state governments pension certain classes of workers, and American cities pension firemen, policemen, and teachers. In 1923 Wisconsin defeated an unemployment compensation bill, but in the same year Montana, Nevada, and Pennsylvania adopted old age pension laws. But Pennsylvania's law was shortly declared unconstitutional by the State Supreme Court. In 1925 Wisconsin enacted an old age pension law and the next year Kentucky followed suit. The Federal Government had led the way in 1920 by establishing "a system of compulsory contributory old age and disability insurance for its three hundred thousand employees in the classified civil service." In 1926 the maximum annuity was raised from $720 to $1000 but the increase comes entirely from the employees whose contributions were increased from 2.5 to 3.5 per cent of their salaries. In 1924 California and Wisconsin planned public works to lessen unemployment and in 1925 well over half of the states passed social insurance laws or amendments thereto. Compulsory health insurance as well as old age pension and unemployment should be adequately provided here in order to make the laborer's life more worth while and to adequately safeguard American institutions.

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CHAPTER XI

LUMBERING

Uses of Wood.—Concerning the uses of wood, highly important in manufactures and the various phases of economic development, one of our most gifted writers, Professor J. Russell Smith, of Columbia University, says:

> Man can not get along without wood. It has been useful in all stages of civilization and the more civilization advances the greater is the service it renders. It serves as fuel for the savage's camp fire, it makes the wagon in which the roving tribesman carries his family and goods, and when he settles down to agriculture he uses wood for his plow, for his house, for the barns, for his cattle, and for the fences that limit his land and keep his animals from wandering away. It rendered the same services in the making of house, barn, fence, and household fuel throughout Colonial America, and today its use even as fuel is as great in the United States as ever before. World commerce is served by the millions of trees that go each year into the bed of the railway as ties, while the lordly conifer has for centuries been the mast of the ship. In this day of great movement of goods, surprising quantities of wood are used for barrels and packing boxes, a single Philadelphia soap factory using for this purpose five carloads per week. Each day some inventor finds a substitute for wood in one of its uses, but other inventors find corresponding new uses for it, so that our dependence upon it is increasing day by day. It has even become essential to the spreading of knowledge, for practically all our books and magazines are printed on paper made of wood pulp.[1]

Colonial Conditions.—Of all the continents America is best endowed with useful woods. When the Europeans first settled in what is now the United States, they found that

[1] *Industrial and Commercial Geography* [Henry Holt and Company, New York, 1925] 450.

about half of the land area, or 850,000,000 acres, was forested. The stand of timber, chiefly high-grade material, probably far exceeded the estimate of 5,200,000,000,000 board feet made several years ago.

The colonists, however, regarded the trees as enemies, for in their shelter lurked savage Indians and wild beasts and the motive of fear combined with the necessity of clearing the trees from the ground for agricultural purposes led to a rapid exploitation. The profits of fishing and commerce urged ship construction and the needs of West India construction as well as building and furniture in the colonies helped reduce the stand. The lumbering industry was of some importance in practically all of the colonies, but especially so in New England. The main reason for the early settlements in Maine and New Hampshire was the lumber. Exports of lumber, masts, turpentine, tar, pitch, staves, etc., were sent out from most of the colonies. The manufacture of potash, or ashes of wood burned in pots, and useful as fertilizer and for the manufacture of soap and other products, used part of the wood, and the shipbuilding industry also aided.

Sawmills were erected shortly after settlement, but though artisans were sent to Virginia to erect a mill as early as 1620, the first one constructed was apparently at Dorchester, New England, in 1628. The Dutch erected many mills along the Hudson to run by wind or water. Because the New Hampshire and Maine settlements were composed almost entirely of timber cutters, a sawmill was erected there as early as 1635. The production of lumber —staves, heading, shingles, hoops, boards, timber for masts, spars, buildings, implements, furniture, etc.—was sufficient to afford an export value of $775,000 in 1770. Some laborers made good wages by working in the forests; for instance, a competent workman could make fifteen thousand pipe staves or clapboards a year, which sold for about four pounds a thousand at home and at twenty pounds a thousand in the Canaries.

Development, 1776-1860.—After the Revolutionary War lumbering continued to expand, though it was still largely

a local industry except when abundant water transportation facilities were available. The saw mill was found in every frontier town, for everywhere it followed close on the heels of the pioneer. Cities generally received their supply by raft from an upriver source and acted as markets for the surrounding region. City growth consequently stimulated the lumber trade, but unfortunately the rapid settlement of the country caused the destruction of so much standing timber that many inland towns became dependent upon the city lumber markets. An outstanding characteristic of the period from 1790 to 1860 was the western lumber trade, for the building needs of eastern cities, the demands of industry, the necessity of the railroads, and the requirements after 1840 of the treeless or prairie country led to a rapid expansion. Pittsburgh, during the early part of this period, was the leading lumber market, for it drew on eastern supplies until their exhaustion forced the exploitation of Michigan and Wisconsin sources. During 1857 about 175,000,000 feet were sent down the Allegheny from Pittsburgh, and the stock on hand was estimated at 72,000,000 feet. Just prior to the Civil War, however, Chicago, which drew from greater resources in the Saginaw, Green Bay, Muskegon, Manistee, and other regions, took the lead, receipts increasing from 32,000,000 in 1847 to 459,000,000 in 1857. With the rapid construction of railroads much of the Mississippi Valley sought its supply in Chicago. Dwellers along the Mississippi received part of their supply from the Wisconsin forests. St. Louis, from 1840 on, received lumber rafted to it from the northern region and also cypress from the southern Mississippi region, poplar from Tennessee, and various hard woods from Missouri and elsewhere.

Conditions Since 1860.—In 1880 the Lake group of states led in lumber production, a place lost in the nineties when the Southern group came to the front, a position it has since held, though threatened by the Pacific group. For the last twelve years, however, the South has had nearly one-half of the lumber output. In general, the production for the whole country was upward until 1909 it amounted

to about 44,000,000,000 board feet, the high point of the present century.

Concerning the general scope and character of the industry we read:

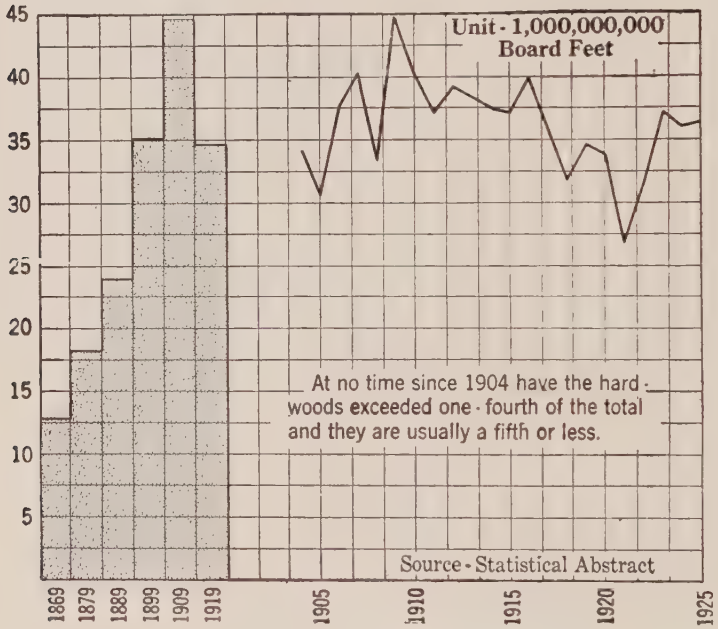

Chart No. 36. Lumber Production.

The lumber industry of the United States includes logging, the operation of saw mills and planing mills, and in some cases the operation of railroads and of ocean-going vessels for timber transportation. Most saw mill operators cut their timber on land which is leased or owned. However, there is considerable contract logging in the Northwest. The output of saw mills covers a wide range, consisting of construction timber and lumber; finished flooring, ceiling, and siding, lumber and dimension stock for factory purposes, etc. Retail lumber yards carry the stock needed to construct ordinary buildings. Ready-cut house bills for sectional buildings are manufactured to some extent.

The greatest part of our lumber supply is used in building

and construction work. It is estimated that about one-seventh of the annual lumber production is used in manufacturing wooden boxes and crates; exports take 6 per cent, and smaller quantities are used in building railroad cars, furniture, vehicles, and other factory products.[2]

Nature of Lumbering.—Lumbering, of course, depends upon forests and favorable conditions of transportation. At times logs must be carried miles to the saw mills and then the heavy boards are taken to the markets and sold. Because the big log is harder to transport than the smaller boards the saw mills are generally located close to the place where the trees grow. Frequently the mills are portable, large saw mills generally being found only when logs can be floated down rivers or brought in by rail. Our forest region comprises all the country between the Atlantic and an irregular line drawn from near the western boundary of Minnesota to the mouth of the Rio Grande, a large part of the higher Rockies, and the forests of the Sierra Nevada and Coast ranges. In the lower parts of California, of the Rocky Mountains, the Great Basin, and the Great Plains it is too dry for the growth of trees. Perhaps the fires started by the Indians to remove the grass kept the trees down on the prairies. At any rate trees now thrive in large areas of the Mississippi Valley when man gives them a chance.

Lumber Districts.—The lumber districts of the United States are variously classified. The forestry map, dependent upon kinds of trees, gives six regions. Another grouping, used by Professor J. Russell Smith, is sevenfold: northeastern district, Great Lakes region, Appalachian highlands; hardwood forests, southern pine forests, western Mississippi Valley and Rocky Mountain region, and the Pacific slope.

The northeastern district includes the upper New England and Adirondack forests, covering a highland with a climate rather cold for ordinary agriculture and a steep and rocky surface unsuited for tillage because of past

[2] *Commerce Year Book* [Government Printing Office, Washington, 1923] 1922, 159, 160.

glacial action. Properly cared for, however, the region will produce lumber indefinitely. Near to cities and easy of logging, because of the heavy snows of winter and the spring freshets, this region was early developed, Bangor, Maine, on the Penobscot, becoming a noted center. In this region the white pine was the most important tree, highly prized, says Professor Smith, because of "its lightness, strength, durability, freedom from warping, cracking, or shrinking, and the ease with which it can be worked." Spruce and hemlock ranked next in importance. Although such broad-leafed trees as the maples, beeches, birches, and oaks are frequently scattered through the forests, they have been generally neglected because the soft woods proved more workable and more salable.

The second region, somewhat similar to the northeastern district, is found around the upper Great Lakes. Glaciers, as in New England, swept down from the North, overspreading Minnesota, Wisconsin, and Michigan and leaving corresponding areas sandy, rocky, and swampy. And in this region the white pine, the spruce, and the hemlock are found. Heavy snows likewise aid in the transportation of lumber to market. Lumbering started in the lower peninsula of Michigan, but soon spread to the upper peninsula. Soon Wisconsin passed Michigan as a lumber state, but with the continued westward movement Minnesota went temporarily into first place. By 1920, however, all the Lake states were importers of lumber.

The Appalachian highland from southern New York to northern Georgia and Alabama forms the third lumber district. Because of the small amount of snow and the steepness of the mountains the logs are transported to the mills on wagons or are sent down chutes of log or steel to a temporary railway in the more level valley. Hemlock is found in western Carolina, hemlock and spruce in West Virginia, along with some yellow and some white pine. Hemlock was long shipped from the Pennsylvania mountains, but by 1910 lumber was being regularly imported into that state. In fact, about seven-eighths of all the lumber consumed in Pennsylvania and New York is shipped

in from the outside, the freight bill of each amounting to more than twenty million dollars yearly.

The fourth region, that of the hardwoods, extends roughly from New York and the lower Great Lakes on the north to Alabama and Louisiana on the south, and from Tennessee far enough west to include the Ozarks. Oak, hickory, chestnut, tulip, black walnut, ash, and basswood are found. Arkansas, Tennessee, West Virginia, Michigan, and Wisconsin now lead in production. Memphis is the most important hardwood center in the world, and Chattanooga and Evansville are important markets. The leading woods are oak, maple, and red gum. Chestnut, beech, and yellow poplar are produced to a greater extent in this region than in any other.

The southern pine forests, forming a fifth district, extend with scarcely an intermission along the coast all the way from Long Branch, New Jersey, to Austin, Texas. The yellow or hard pine, because of its strength, is highly prized for flooring and interior woodwork. In recent years about one-third of the country's entire cut has been yellow pine. Lumbering is a less difficult task in the South than in the New England or Appalachian regions. Temporary railroads are laid about a third of a mile apart, so that donkey engines winding cables a thousand feet long can draw logs from the woods to the railroad tracks. With the favorable climate and proper care the South can be permanently kept a source of soft woods. But that care is lacking. Every year sees thirty or forty lumber mills in the pine district stop and that number added in the West. Most of the southern ports in this district are noted for lumber exports. Rail shipments are also common. The cypress, another southern tree, is highly valued for shingles and interior work. Until the exhaustion of the Dismal Swamp supply Norfolk was an important cypress market. Florida next came to the front, but scarcity led to the rise of New Orleans, which drew on the swamp lands of the Mississippi. Gum trees, formerly passed by, while cypress was cut, are now of increasing importance.

The middle region of the Mississippi Valley north of the

Ozarks had some mixed hard woods when the homesteaders invaded the territory in the nineteenth century. Oak, hickory, maple, ash, and elm were abundant in Ohio and Indiana. Illinois, too, had fine hard woods alternating with open prairies. And the streams of Iowa, Kansas, and Nebraska had forest-covered banks. West of the source of the Mississippi in the North the damp glacial swamps and lakes had preserved forests and in the South the rains had pushed the southern forests over eastern Texas and the hardwood forests close to the Kansas boundary and beyond the Ozarks. But on to the Rockies, save for an inferior highland forest in the Black Hills region, was an area devoid of timber, because of the dearth of rainfall. And for the same reason trees grow only on the high elevations of the Rockies. Plateaus in New Mexico and Arizona, especially the latter, contain forests. The Rocky Mountain trees include western yellow and lodge-pole pine, spruce, Douglas fir, and the western red cedar, about three-fourths being uncut. Because of inaccessibility and the small prospects of permanent settlements railroads are scarce. Down flumes or troughs through which water flows perhaps for miles the logs are moved to the mills or to railroads.

The last district, the Pacific slope region, begins about the thirty-fifth parallel of latitude, but the trees at first, because of scanty rainfall, are found only on the mountain slopes or river banks. And on to the Canadian boundary trees also grow in the valleys. The Sierras and Cascades in the interior limit rainfall and there are no forests except on the highest mountains, as the Blue Mountains of northeastern Oregon. The big trees of California are famous, but more important for commercial purposes are the redwood of California and the Douglas fir. Because of the difficulty in getting the logs to market much of the timber is wasted. Ordinary wagons are too weak for trees that may measure ten feet in diameter, but sometimes donkey engines or long teams of oxen pull them over roadbeds made out of small logs. Temporary railways and log chutes also aid. Some logs have to be split by blasting before they can be handled. Some of the western mills are unex-

celled, using all of the log that reaches them, producing shingles, lumber, and match sticks and feeding the sawdust and bark to the engine fires. Seattle and Tacoma, Washington, and Eureka and Humbolt, California, ship timber all over the world.

Lumber Products.—In 1809 manufactures of wood were estimated at little more than $5,500,000. Development continued with particular rapidity in the period 1849 to 1859, when the value doubled and stood at almost $105,000,000. The United States in the words of the Census stood "altogether unrivalled, as well for the extent and perfection of the mechanism employed as the amount of the product." By 1899 the value was over $1,000,000,000, the leading manufactures among the twenty-six being: lumber and timber products; lumber, planing mill products including sashes, doors, and blinds; furniture, factory product; cooperage; boxes, wooden packing; looking glasses and picture frames; wood, turned and carved; and coffins, burial cases, and undertakers' goods. In 1923 the lumber products were worth more than $3,600,000,000.

Ordinarily logs are taken to the saw mills by chains and drawn under a saw to remove the bark. Next, they are placed on frames and run under, as Professor Keir says, "a whole battery of thin, keen, double-edged saws that with one operation slice the logs into boards," which are sent on "to a drying yard or placed in artificially heated chests" for seasoning and drying. Mills increased in a marked way in size, and changes in location being difficult, mill owners became timber-culturists as well as cutters, and planted trees in place of those cut. Toward the close of the nineteenth century a more careful use of material began, even the sawdust and bark being used for various purposes.

In fashioning the various articles from clothes-pins to pianos somewhat similar methods are employed: sawing, planing, lathe processes, glueing, polishing, and assembling. In woodcarving and cabinet work skilled laborers are necessary, but machinery managed by less skilled workers is used in the manufacture of such things as matches and

spools. Every city has a group of skilled workers which supplies in part its needs in woodcarving and cabinet work, and some cities, such as Grand Rapids, Michigan, Sheboygan, Wisconsin, and Gardner, Massachusetts, have acquired fame in making, partly by machinery, particular products which are "knocked down" and then shipped to other points. Factories which use automatic machinery are generally located where power and raw materials are abundant and cheap, for, because products, such as clothespins, rolling-pins, spools, matches, etc., are small and capable of close packing, distance from the market is not so important as in the former group.

In 1919 four classes of establishments—lumber and timber products which included logging camps, cooperage stock mills, veneer mills, merchant saw mills, and dependent planing mills, or planing mills operated in conjunction with saw mills; lumber, independent planing mill products; wooden packing boxes; and custom saw mills—turned out products worth over $2,000,000,000. The industry was well distributed, though Washington with 11.4 per cent of the total had slightly more than the next two states, Louisiana and California. Sawed lumber declined by nearly 10,000,000,000 board feet, 1909-1919, but stood at more than 34,500,000,000. Yellow pine made up over 13,000,000,000 board feet, Douglas fir nearly half as much, oak over 2,700,000,000, and western yellow pine, hemlock, and white pine in the order named approximately 1,750,000,000.

In 1919 nearly 5,500,000 cords of pulp wood were consumed. Of this amount spruce, about half of which was imported, contributed 58.2 per cent; hemlock and poplar followed. Maine, New York, and Wisconsin used nearly three-fifths of the total. Of the various paper industries more than three-fifths now use wood pulp, though the use of spruce, hemlock, and poplar sticks did not become popular until after 1840. Mechanical pulp is easy to make and cheap, but very weak because the fibers are too short, and so chemical pulp has been developed. Wood is first chipped, then placed in a tank which contains either acid or alkali to eat out the organic matter and leave unde-

stroyed the fibrous cell walls, and then pulped and manufactured after the excess alkali or acid has been removed. Most paper is a mixture of the two. In early days a man could enter the printing business with a few thousand dollars, but now a capitalization of several millions is not uncommon, and a large mill or paper may hold tens of thousands of acres of forest land. As late as 1879 the value of paper and wood pulp was little more than $53,000,000 but in 1923 about $907,347,000. New York, Maine, Massachusetts, Wisconsin, Michigan, and Pennsylvania have led in recent years.

Timber Mining.—Concerning timber-mining a government document declares:

> Largely through timber mining the original stand has been reduced from more than 5,200 billion board feet to approximately 1,600 billion feet of virgin timber and 600 billion feet additional in culled and second growth stands. Seventy-five per cent of the remaining virgin timber is west of the Great Plains, and more than 50 per cent of all our remaining saw timber is in the three Pacific Coast States, while nearly half of the lumber cut is consumed in the region east of the Mississippi and north of the Ohio and Potomac Rivers. Lumber producing and consuming centers are so far apart that we pay $250,000,000 annually in lumber freight. Seventy-five per cent of our lumber cut and fully 90 per cent of the product of high quality is still taken from virgin stands. Thirty-eight thousand four hundred forest fires, the invariable accompaniment of timber mining, burned over more than 8 million acres in 1921. Depletion and higher prices have reduced the drain on our forests, but the amount taken is still four times replacement by growth. . . .[3]

Timber mining with forest fires has reduced our stand of 822,000,000 or more acres to 138,000,000 of virgin forest, 250,000,000 acres of rather inferior and culled growth, and 81,000,000 acres of unproductive land, or a total of a little less than 470,000,000 acres. As previously noted, agriculture was one of the causes of forest reduction, for the early settlers had to clear land in order to produce food. By

[3] *Agricultural Year Book* [Government Printing Office, Washington, 1923] 1922, 84.

1880 approximately 150,000,000 acres, or twenty-two per cent of the original eastern forest, had been cleared for farms and most of the timber destroyed because of the lack of a market. In the last four decades little timber has been destroyed for land clearing. In the eastern states about 50,000,000 additional acres have been cleared for agriculture, but the timber has not been wasted. In the West only a small part of the land "has been cleared for farming ahead of the lumber man." Agriculture, on the whole, however, has been responsible for clearing about 200,000,000 acres, or about twenty-four per cent of our original forest area. All forest land cut or burned over has not been used for agriculture; in fact, the amount not thus used is now about 181,000,000 acres and it is being increased by a cut of about 10,000,000 acres yearly.

But all people do not accept the statements just made with regard to lumbering. To-day there is a greater stand of merchantable timber west of the Rocky Mountains than there ever was in all of the original forests of New England, New York, Pennsylvania, New Jersey, Michigan, Wisconsin, and Minnesota, according to Henry Schott, Director of the West Coast Lumber Trade Extension Bureau. Gifford Pinchot in 1907 predicted a lumber famine in nineteen years, but the lumbermen with a "queer, ingrowing modesty" have been secretly, but effectively, practising conservation. Schott closes an interesting article as follows:

> The policy under which the West coast lumbermen are operating is to harvest the ripe forests and have the lumber go into useful purposes when it is at its best, and to grow a new crop just as the grain farmer of Kansas or Iowa operates in his grain fields. The question arises why such facts were not brought to the attention of the conservation enthusiast. That's for the lumberman to answer. . . .[4]

Legislation.—Efforts have, of course, been made to conserve our forest resources and even increase them. The annual arbor day, begun in 1872, created a little interest in our forest resources. In 1873 the Timber Culture Act

[4] *Nation's Business*, September, 1926, 24.

granted to settlers 160 acres of land on condition that they planted and cultivated a specified number of trees. In 1876 the government appointed a forest agent in the bureau of agriculture and five years later created a division of forestry, but the appropriations were so small that little could be done. In 1891 the president was authorized to set aside in the various states and territories public lands as forest reserves. The Yellowstone National Park located in

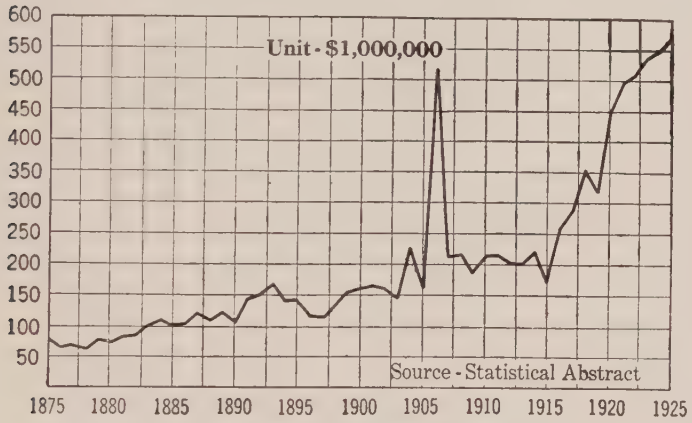

CHART NO. 37. FIRE LOSSES.

Montana and Wyoming with an area of about 2,142,720 acres was created in 1872 and the Yosemite reservation of 682,480 acres with the Sequoia of 160,000 acres in 1890; other national parks of smaller size have also been created. In addition to the national parks timber reservations have been established and the aggregate net acreage for the 159 national forests on June 30, 1925, was 158,395,056, including Alaska and Porto Rico. In 1901 the bureau of forestry was authorized and this in 1905 became the forest service under the department of agriculture.

The Weeks Bill, passed in 1911, appropriated $1,000,000 for that year and $2,000,000 thereafter until June, 1915, for the purchase of forest lands in the southern Appalachians and White Mountains; it, moreover, sanctioned state

efforts at conservation and appropriated $200,000 for fire protection. These appropriations were dependent upon similar appropriations by the states. Five per cent of the receipts from reserves in a given state went for its roads and schools and later this was increased to twenty-five. Up to June 30, 1925, 2,584,078 acres had been approved. The total income to the government from the national forests, chiefly for lumber and grazing privileges, amounted to a little less than $4,800,000 in 1920 and to a little more than $5,250,000 in 1924. From time to time new national parks have been created, often by the transfer of land from national forests; for example, the Grand Canyon National Park was formed in 1919 with an area of 606,720 acres. By the close of the nineteenth century attention was being turned to forestry schools and in 1898 the New York legislature provided for such a school at Cornell University and made appropriations to secure about thirty thousand acres for experimentation in scientific forestry. Now such schools are common and the United States has a trained forestry service of 150 or more members.

Need of Care.—The total annual drain from the forests of the United States is about twenty-five billion cubic feet, of which more than two-fifths is used as fuel wood and nearly as much as sawed lumber. It may not be amiss to point out that if we are to maintain our lead as a lumber-producing country certain things must be done. In the first place, we must stop unrestrained exploitation; in the second place, we must reduce the waste, which amounts to about ten billion cubic feet yearly; and in the last place, we must increase timber production "to the full capacity of the land." In the words of the document previously quoted:

> The ultimate goal of timber growing is a nation-wide extension, region by region, of what has already been attained on private lands in limited parts of the Northeast and in the administration of the National Forests, namely, a sustained yield of forest products, an adjustment of forest-using industries to the growing capacity of the lands which supply them, a balance between timber production and timber use. Before the war Ger-

many was producing 50 cubic feet to the acre of forest land; France 36 feet per acre. We must grow at least 48 cubic feet per acre to meet our present requirements. This rate of growth can be attained if the art of timber culture is thoroughly developed by research in each important forest region and applied by demonstration on public forests and an aggressive campaign of education to reach the private owners of forest land.

By recognizing the importance and urgency of two great national problems, land use and timber supply, by taking full advantage of the powerful forces of public necessity and private opportunity which are working toward the solution of both problems, we can grow on our forest lands timber crops sufficient to meet our wood requirements if public agencies and private owners each do their share. The alternative is idle forest lands and timber bankruptcy.[5]

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[5] *Agricultural Year Book*, 1922, 180.

CHAPTER XII

MINING

Colonial Products.—Less important perhaps in the early period of our history for manufactures, but fully as important now as the lumber resources are the minerals. In 1608 iron ore was exported from Virginia and about 1650 E. W. Gent published a pamphlet on Virginia in which he said: "Neither does Virginia yield to any other province whatsoever in the excellency of this oare; and I cannot promise to myself any other than extraordinary successe and gaine if this noble and useful staple be but vigorously followed."[1] Various furnaces were established in Virginia and the colonies to the south, except Georgia, prior to the Revolutionary War. Before the middle of the seventeenth century iron works were operated in Massachusetts, and before the Revolution in all of the colonies to the north of Virginia. Copper was found in some of the Middle Colonies and Connecticut, and coal had become so important in Virginia by 1789 that the Virginia interests demanded and obtained protection for it in our first tariff act.

Iron.—Iron, the most important mineral, had been mined in practically all of the colonies, or obtained from swamps and ponds. Deposits in water were from six to twenty-four inches deep and a man with grappling irons or tongs could gather two tons a day. But the iron industry was not especially important until the development of railroads after 1830. Although iron deposits in Ohio, Kentucky, and Tennessee supplied local demand for nails, pots, kettles, flat irons, ovens and other frontier needs, they were not at first used for the manufactures of Cincinnati, Louisville, and near-by cities. Small iron deposits had been known in

[1] Bishop, J. L. *A History of American Manufactures,* 1608-1860 [Young, Philadelphia, 1868] Vol. I, 33.

southeast Missouri for many years, but not until 1840 were they able to supply St. Louis and to contribute a surplus for shipment to Ohio points. About the end of the first quarter of the nineteenth century the discoveries in the Hanging Rock region, southeastern Ohio and adjoining parts of Kentucky, led to an increase in local production and manufactures. Although the existence of iron ore on the southern shore of Lake Superior was known by 1830, the first shipment from the Marquette mines did not occur until twenty-three years later, and in 1860 Pennsylvania was still the leading producer. But that is no longer the case.

Because of their great size, their richness, and the ease of mining the Superior fields produce far more ore than any other region. Some of the ore beds are so close to the surface and so pure that the ore can be scooped from open pit mines with steam shovels and loaded on freight cars without being touched by human hands. The cars are then run out on high docks, the ore dumped into ore pockets, and then into the waiting steamers from which it is later lifted by large buckets moved with the precision of human hands. The Birmingham ores were exploited about 1870, but did not attain very high importance until the close of the nineteenth century. Probably no region in the world, however, allows production with less effort than northern Alabama. An open ledge of iron ore is on one side of the valley, the limestone for fluxing the furnaces is on the other side, and shallow coal mines are only a few miles away. Colorado, with local coal and ore, is attaining some importance because of its distance from other fields, but its proportion of the country's output is only one per cent. The Pacific coast, with fuel scarce, wages high, and access from other regions easy, has only a small iron-smelting industry.

In 1860 the production of iron ore, about two-thirds of which came from Pennsylvania, was over 2,500,000 short tons, and in 1870 over 3,000,000; in each of the next four decades, however, it more than doubled on the average and in 1917 set a high point of 75,288,851 tons. In 1879

Pennsylvania was still the leader, but ten years later Michigan was easily in first place with about two-fifths of the production, a position which she held until 1901 when Minnesota obtained the honor. Since 1905 Minnesota has not failed to produce half or more of all the iron ore mined. Michigan since 1901 has always held second place

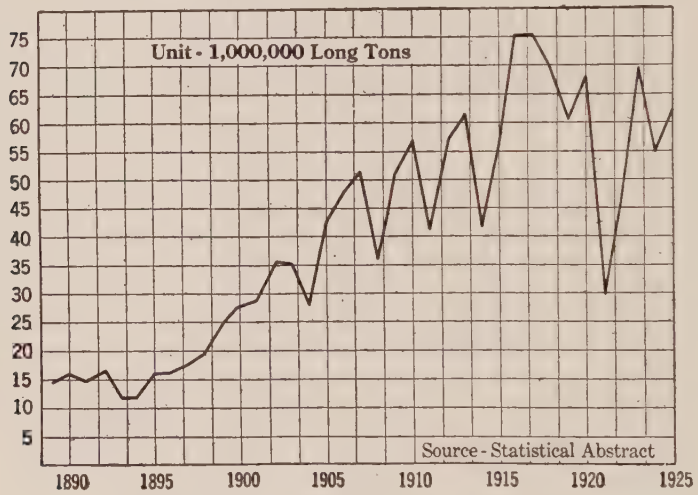


Chart No. 38. Production of Iron Ore.

and Alabama third. Wisconsin and New York dispute on well-nigh even terms the fourth place.

Coal.—Until well past the middle of the nineteenth century, though England was using coal in manufacturing, our people were busily engaged in farming and in breaking in the free lands of the Mississippi Valley. Seldom was coal needed for the family stove, wood having been burned almost exclusively for two centuries. Moreover, our manufactures started in New England along the water line before the steam engine had been improved. Prior to 1789 a small coal field near Richmond, Virginia, had been opened and in that year the northward movement began. In 1822 the Virginia mine was yielding fifty-four thousand tons a year, but it has long been closed by the competition of

superior mines. With the opening of the nineteenth century coal became increasingly important because of the clearing of the forests, the growth of cities, the development of the factory system, and the use of steam engines. Bituminous coal was scattered all over the country, but the anthracite was confined almost entirely to Pennsylvania, although Rhode Island was credited with a thousand tons in 1860.

Anthracite coal was discovered near the site of the present Wilkes-Barre, Pennsylvania, in 1762, and near Mauch Chunk in 1791. As early as 1768 a Wyoming Valley blacksmith is said to have used it locally and before long several "ark" loads were sent down the Schuylkill to Philadelphia. The first shipments by wagon were perhaps made in 1807. Obstacles in mining and transportation delayed adoption, but later on Philadelphia, Baltimore, and other eastern cities purchased supplies. Production amounted to a ton a day by 1820. Anthracite was apparently first used in generating steam about 1825 and in smelting iron twelve years later. Production amounted to 50 tons in 1815 and 215,200 in 1830; for 1860 the production was about 9,400,000 tons and the value nearly $12,000,000, or more in both cases than that of the bituminous coal. Not until 1879 in a census year was the anthracite passed by the bituminous coal. The high point in the production of the anthracite coal was set in 1917 at more than 99,600,000 short tons, of which Pennsylvania produced practically all. Because anthracite coal is "used largely in heating houses," the amount of the output depends "more on labor condition and on temperature and weather than on general business condition," as pointed out in census reports.

Bituminous coal came into use for industrial purposes shortly prior to 1800 in the neighborhood of Pittsburgh; other cities near-by purchased a supply and a thriving river trade soon developed. By 1855 the estimated consumption of coal in Pittsburgh was 22,000,000 bushels and the export 14,000,000. Flat boats with 8,000 to 12,000 bushels journeyed to Cincinnati, Louisville, St. Louis, and

river towns as distant as New Orleans. The consumption of coal for the production of gas began in New Orleans in 1834, in Pittsburgh in 1837, and in Louisville in 1839. With the exception of Illinois, Kentucky, and Tennessee, there was little production of coal in the interior prior to the Civil War. In 1859, of the more than 6,000,000 tons produced, Pennsylvania contributed nearly half and has since led, though central and southern states have contributed increased percentages. By 1889 the production was nearly 96,000,000 tons, or more than double that of the anthracite, and the tendency, with some fluctuations, was steadily upward until 1918 when a high point was set at 579,385,820 tons, or about six times the anthracite production. In 1919 bituminous coal was worth $1,145,977,565, or 75.9 per cent of all coal. Pennsylvania contributed nearly a fourth of the bituminous values, or more than West Virginia and Illinois combined. The ranking in 1925 was: Pennsylvania, West Virginia, Illinois, and Kentucky.

The total coal production increased rather steadily until 1918, the high point. It amounted to 240,086 tons in 1829, to 15,633,175 in 1859, to 253,741,192 in 1899, and to 678,211,904 in 1918. The next year production decreased about an eighth of a billion, chiefly because of the strike. The depression of 1920-1921 affected the soft coal production. In 1922 the anthracite production was reduced about two-fifths, chiefly because of the strike. Recent increases in production have in general been in the eastern region. In the early period the production of coal increased far more rapidly than the population, but this has not been true in recent years. Nevertheless, we may quote:

> . . . In 1829 only about one-fiftieth of a ton of coal was produced per capita as compared with five and one quarter tons 90 years later, and, whereas the population of the country in 1919 was approximately 8 times the population of 1829, the production of coal was more than 2,000 times that in 1829, 350 times that of 1839, and 85 times that in 1849.[2]

[2] *Fourteenth Census* [Government Printing Office, Washington, 1922] Vol. XI, 259.

Methods of mining and of utilizing coal vary in a marked way. In two important coal states, Pennsylvania and West Virginia, the coal is in a high plateau, which has been cut by deep valleys, and the coal outcrops on the hillsides, thus allowing an easy entrance. In parts of the Rocky Mountains and Great Plains regions the few people obtain their supplies by means of a pick, shovel, and wagon attack on the cliffs, bluffs, and river banks. Such conditions are very

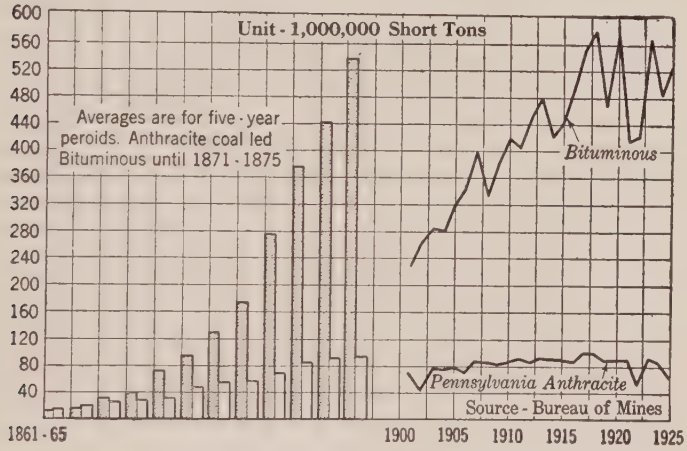


Chart No. 39. Coal Production.

dissimilar from the deep mines of Europe and the hard conditions of the Pennsylvania anthracite fields. In the latter coal is in the folded and bent mountain strata, pressure of the mountains having changed it into anthracite. In certain places, as at Hazleton, it may outcrop, but often it is a half mile or more below ground. Deep shafts are needed. The anthracite, moreover, needs sorting, cleaning, and preparing to get rid of the shale.

The most important uses for coal are: factory, locomotive, and steamship engines, smelters which extract metals from ores, and electric power houses and gas works. About half of the locomotive fuel is wasted and a very high proportion of the coal burned in grates and furnaces. But

improvements are being made. For example, the producer gas plant can obtain the inflammable carbon in the form of gas from any coal, no matter how inferior, and also from peat, wood, tan bark refuse, and dried sewage. And the Dismal Swamp, we might note, has several hundred square miles of peat bog twenty to twenty-five feet deep. Low grade coals are burned also in the form of dust driven by a blast of air. Briquetting, or the compressing of small particles of coal with something of an adhesive nature, will utilize more of the coal supply. Possibly its greatest field will be in connection with coke.

By-Products.—Coke is necessary in iron-making. It is made, says Professor Smith, "by heating coal in closed retorts where the gas and liquid matter are driven off as vapor and the coke is left in big lumps that are harder than the coal itself and therefore hold up the burden of the ore so that the fire in the blast furnace does not smother."[3] In the old bee ovens the coal was roasted in conical brickkilns at great loss, sometimes ten thousand cubic feet of gas being wasted per ton. That is saved by the new methods. Properly treated 2,000 pounds of coal will give 1,425 pounds of coke, 10,500 cubic feet of gas, 19 pounds of sulphate of ammonia, 7.1 gallons of tar, and 2.4 gallons of crude oil.[4]

It is only within recent years that other important by-products of coal—such as drugs and dyes—have been obtained. An English chemist, in 1856, succeeded in producing a violet dye from aniline which had been derived from coal tar. Other chemists worked in the same field, and to-day more than 700 distinct color dyestuffs are known and more than 62,000 aniline dyes are listed by chemists. And so a product formerly wasted in the coke oven is used to color man's clothing, food, and other articles. But the early development was due chiefly to Germany and England, the United States proving a laggard until the World War shut out the German supply. Early efforts were

[3] *Industrial and Commercial Geography*, 421.

[4] Whitbeck, R. H., and Finch, V. C. *Economic Geography* [McGraw-Hill Book Company, New York, 1924] 166.

unsuccessful, but after our manufacturers called in the best chemists and invested money in technical research success came. In 1913 the United States had only seven dye plants, but ten years later ten times that number were in active operation. And those plants supplied nearly nineteen-twentieths of the dyes used, whereas in 1914 nine-tenths had been imported. In 1923 coal tar dyes were valued at more than $60,300,000 and all coal tar products at nearly two and a half times as much.

Petroleum.—Closely connected with coal as a mineral fuel, though not developed until later than some other mineral products, are petroleum and natural gas. The former, perhaps formed from animal remains left in rocks, was known to commerce as medical oil as early as 1817, and in 1853 a company tried to collect oil by absorbing it in blankets spread upon the ground, but not until E. L. Drake successfully drilled a well at Titusville in western Pennsylvania in 1859 did it become important. The yield of about ten thousand barrels in 1859 was valued at about twenty-nine dollars a barrel, but some of the three million barrels produced in 1862 were sold as low as ten cents because of over-production and lack of transportation facilities. Construction of pipe lines, of course, stimulated the industry. The first local line was opened about 1865 and ten years later various organizations were chartered to construct pipes to the seaboard. About 1865 especially constructed box cars with tanks capable of holding two to four thousand gallons were prepared, but these gave way in time to the especially designed tankers. Immense storage facilities well located for commerce furthered the trade in oil, which in recent years has ranked next to cotton in value for our export trade.

The introduction of the automobile has led to a marked increase in the use of gasoline and lubricating oils, and the demand for fuel oil has been notably increased by locomotives and steamers and even house furnaces and stoves. The use of such commodities as illuminating oil, gasoline, naphtha, benzine, paraffin, lubricating oils, etc., has thus played a part in the development of the industry. The

location of the wells has shifted, though until about 1885 western Pennsylvania and New York were almost the only

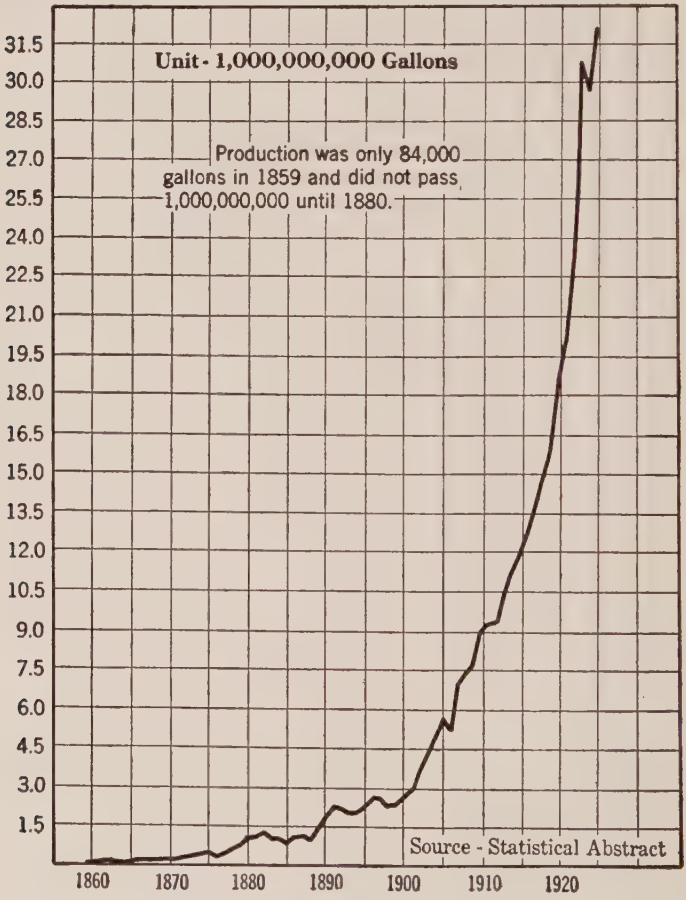


CHART NO. 40. PETROLEUM PRODUCTION.

producers. Ohio began to produce about that time and for a few years after 1895 ranked first. Considerable amounts were produced in West Virginia in 1889. The first field, about 160 miles long and twenty-five to forty

miles wide, had twenty thousand deep wells and four thousand miles of pipe line by 1900. California about 1895, Texas about 1898, Oklahoma about 1904, and Illinois about 1906 began to produce large amounts; all had contributed oil prior to the dates mentioned. In 1914 California, Oklahoma, Illinois, and Texas were the leaders; five years later California, Oklahoma, Texas, and Kansas had that honor. In 1919 the Mid-Continent field produced 49.1 per cent of the petroleum and the Pacific Coast field 27.9; the Appalachian field ranked third and the Gulf Coast fourth. The 1925 leaders were California, Oklahoma, and Texas.

Oil production is very uncertain. Pennsylvania produced thirty-three million barrels in 1891, but little more than a fifth that amount in 1923. Ohio set its highest production in 1896, West Virginia in 1900, and Illinois in 1908; each now produces about as much as Pennsylvania. In 1905 Texas produced twenty-eight million barrels, in 1909 only a third as much, but in 1922 more than four times as much. Apparently Texas, Louisiana, Kansas, Oklahoma, and California are at their zenith. The Rocky Mountain region, centering chiefly in Wyoming, is a future field.

Within the past few years our oil reserves have been tapped with feverish activity. Oklahoma, Texas, and California have witnessed hundreds of new shafts sunk, and oil speculation has been rife. The result of this overdevelopment was to send the prices of oil down, in 1926, and to cause a conference of leaders in the industry, in the spring of 1927, to discuss ways and means of curbing the output. Millions of gallons, they claimed, were going to waste.

Meanwhile the government itself has sounded more than one warning concerning this reckless expenditure of a natural product. One report went so far as to state that an end of the reservoirs in sight might be reached within six years.

Two reserves, other than the use of alcohol, are available —oil shale and benzol. The former seems abundant in the Rocky Mountain region, but the cost of production is higher

than that of the ordinary oil. Crude oil is produced by distilling the shale in large retorts, the average yield being a barrel of forty-two gallons to the ton. Benzol may be obtained to the extent of several gallons from every ton of soft coal, as previously noted, by heating it before the coal is burned.

Natural Gas.—Natural gas developed shortly after the petroleum. Its advantages for industrial and household uses are: greater heat value than any other fuel, no preparation for combustion, no residue left, immunity to effect from ordinary temperature, and easy distribution by pipes to points of consumption. Natural gas has been used for many purposes, including the manufacture of gas, the generation of steam, puddling iron, roasting ores, heating houses, manufacturing steel, power in gas engines, for drilling and operating gas wells, for pumping oil, and for producing lamp black. Although natural gas was used to light Fredonia, New York, as early as 1821, large-scale use dates from about 1870. The value of natural gas increased from $215,000 in 1882, with occasional fluctuations, to $254,000,000 in 1924. Production in the latter year was estimated at 1,141,000 million cubic feet. The leaders in natural gas production in 1919 were West Virginia with nearly a third of the total, Oklahoma with over a fifth, and Pennsylvania with over a seventh. In total production the Appalachian field ranked first with 57.2 per cent, the Mid-Continent field second with 35.0, and the Pacific Coast and Rocky Mountain fields third and four with lesser amounts. The 1924 leaders in gas produced and marketed were Oklahoma, California, West Virginia, and Louisiana.

But, like coal and petroleum, and many other resources, natural gas is being squandered in a variety of ways, in spite of the warning given by rising prices, which mounted from an average of five cents per thousand cubic feet in 1913 to 54 for domestic consumption and 11.6 for industrial in 1924.

In a later development, natural gas gasoline not reported in the Census of 1909, the Mid-Continent field ranked first with 65.7 per cent of the production in 1919. The Ap-

palachian field was second with 21.2 per cent and the Pacific and Rocky Mountain fields third and fourth with

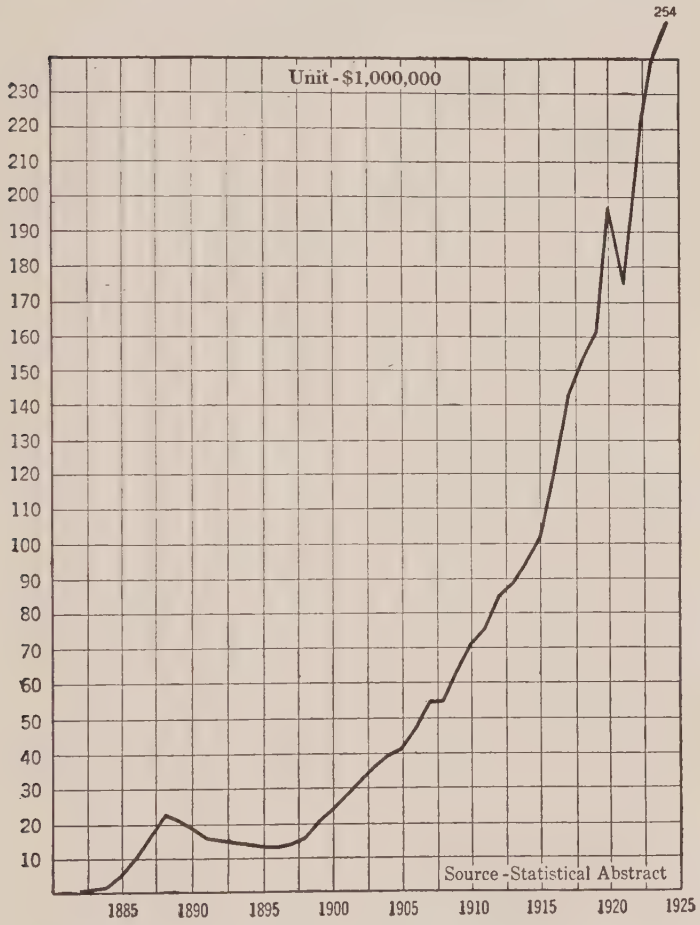


CHART NO. 41. VALUE OF NATURAL GAS.

lesser amounts. The number of gallons produced was 454,089,466 and the value of the products $78,760,835; the figures for 1925 were about 1,104,900,000 and $117,000,000

respectively. Oklahoma, California, Texas, and West Virginia led in 1925 values.

Copper.—Of increasing importance to man, due chiefly to the development of electricity, has been the mining of copper. Although produced to some extent in the colonial period the product of 1845 was only a hundred tons, but in 1846 the Cliff Mine in Keweenaw County, Michigan, began to produce small quantities, and shortly thereafter the United States became independent of the foreign supplies. Prior to the Michigan discovery, copper had been chiefly used for stills, and kettles, as an alloy in brass, and in the shipbuilding trades for fastening and sheeting. In 1850 the United States produced about one per cent of the world's output, and by 1860 the production was only 7,200 tons, of which Michigan yielded about half. Among the other leading producers were Tennessee, North Carolina, Virginia, Maryland, and New Mexico. From 1860 to 1880 Michigan was the leading producer because of pure ores, not always an advantage on account of the labor of cutting, and cheap transportation, and as late as 1880, produced eighty-two per cent of the total output; but thereafter her proportion decreased as a result of declining productivity, some of the mines being a mile deep, and the development of western mines. The Clifton-Morenci District of Arizona was discovered about 1865, the Bisbee District received attention after 1879, and the Globe District about three years later. Butte, Montana, dates from the discoveries at Missoula Gulch in 1864, and the Anaconda mines became productive about 1882. The smelter capacity of Butte is about a third of a billion pounds yearly, or more than the production of any foreign country. At Great Falls is one smelter with a capacity of 4,500 tons of ore per diem and with smokestacks five hundred feet high, yet too low to prevent the sulphurous fumes from killing the near-by trees. California began to produce considerable amounts about 1899, and Utah two years later, though both had been producing for some time. The development of all of these districts, of course, depended upon transportation facilities.

Not until 1888 did copper production pass the 100,000 ton mark, but with some fluctuations the movement was upward until a mark of 860,648 long tons was set in 1916. Since that time production has not been so large and the depression of 1920-1921 has exercised a bad effect, though beginning with 1922 the movement was upward again.

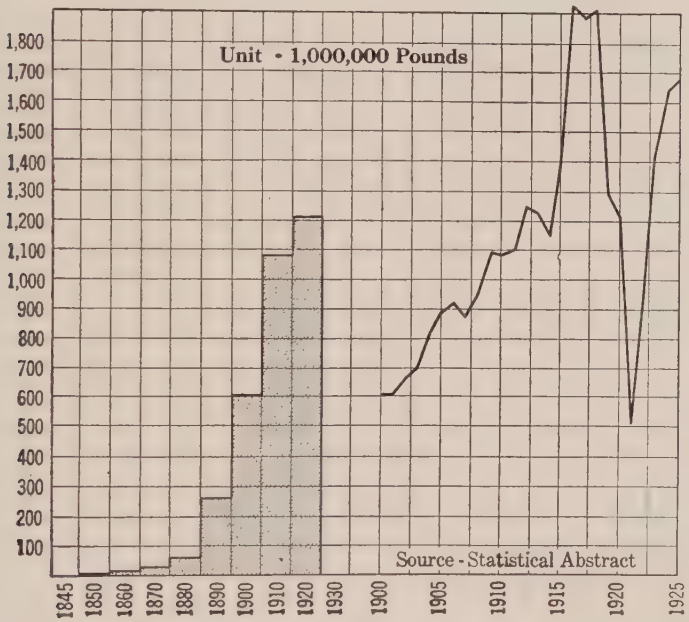


CHART NO. 42. COPPER PRODUCTION.

In recent years Arizona, Michigan, and Montana have been the leading copper producers, but the latter has been passed by Alaska. In 1919 Arizona produced 46.5 per cent of the $181,258,087 value for the entire country, and Michigan produced nineteen per cent. The 1925 leaders were Arizona, Montana, Utah, and Michigan.

At the present time the United States produces from one-half to three-fifths of the world's copper, or three times that of her nearest rival, Chile, and ten times as much as

Spain, the leader for centuries. Arizona now normally produces as much as any two foreign countries combined. As a usual thing copper is found in combination with other materials. One Utah mine also contains silver, gold, and iron. In Colorado copper is frequently found in combination with lead and silver. Sulphur, frequently found with the copper, is generally driven out by roasting the ore, the sulphur uniting with the oxygen of the air. The sulphur, so destructive to vegetation and unpleasant to the near-by dwellers, may be turned into sulphuric acid at less than a dollar a ton. Two tons of this acid to one ton of phosphate rock treated in the scientific concentration plants will produce a valuable fertilizer.

The mines of Utah and Nevada, as is true of some of the Lake Superior iron ores, have the steam shovel type of mining. One example of porphyry mining is found near Salt Lake City. The distance of the copper bed from the surface of the ground is found by drilling, the top soil is then stripped off by steam shovels, the ore is next scooped up by shovels, thrown into railroad cars which discharge through the bottom, and then hauled to the concentration plants. Although this ore is of low grade, the ease of mining and the great size of the beds have put Utah and Nevada among the first half dozen copper states.

Gold.—Connected with copper in the last census report are gold, silver, lead, and zinc, to be considered now in order. Although the world production of gold is less valuable than the combined corn and oats crops of Iowa, gold has always led man to risk life in its pursuit. It was one of the lures which drew the early explorers and settlers to America. It guided De Soto and numerous other adventurers in their weary travels, and the first cargo sent to England from Jamestown was a spurious or "fool's gold." Small amounts of gold were discovered in Georgia and the Carolinas in the colonial period, but little was produced in the country until the discovery by James Marshall at Sutter's Mill in California in 1848. This started the historic Gold Rush of '49, and the first year the production was worth about five million dollars. By 1853 it had reached

to about thirteen times as much. The economic effects of the discovery are hard to over-emphasize. Commerce and manufactures were stimulated, the prices of goods and the wages of labor were increased, more laborers were employed, a wilderness was populated, the Pacific Coast was developed, new lines of steamships were established, a trans-continental road was made a necessity, the slavery struggle was accentuated, and the world was later influenced to the adoption of a gold standard. The effects on the coinage laws will be considered in some detail later.

Gold was discovered in Colorado in 1852, but development did not really begin until after 1860. In the early period miners shifted rapidly from place to place, but as time passed mining became more stable. Toward the close of the century the Klondike and Cape Nome mines of Alaska were opened, inciting another mad rush of prospectors.

Our total production of gold from 1792 to July 31, 1834 was valued at $14,000,000, and from July 31, 1834 to December 31, 1844 at $7,500,000. As late as 1847 the product was worth only $889,000. In 1850, however, the production was worth $50,000,000 and in no year since then has it fallen below $30,000,000; from 1906 to 1916 inclusive it fell below $90,000,000 only once and then by a slight margin. California, Colorado, Alaska, and South Dakota are the usual leaders.

Gold collects into veins of quartz in different kinds of rock. Through the destruction of exposed veins by weathering and stream action, gold has been carried considerable distances from the original veins. The prospector, tracing back up the streams, may find the mother lode. In the early period mining is generally crude. The prospector, with a miner's pan, scoops up sand and water, and shakes the pan until the heavier gold gradually settles to the bottom. It is then separated from the sand. If gold is found in large banks of sand and gravel, hydraulic mining is practised. It consists in turning a powerful stream of water from a nozzle on to the bank. The force of the water propels the sand through long sluice boxes, which

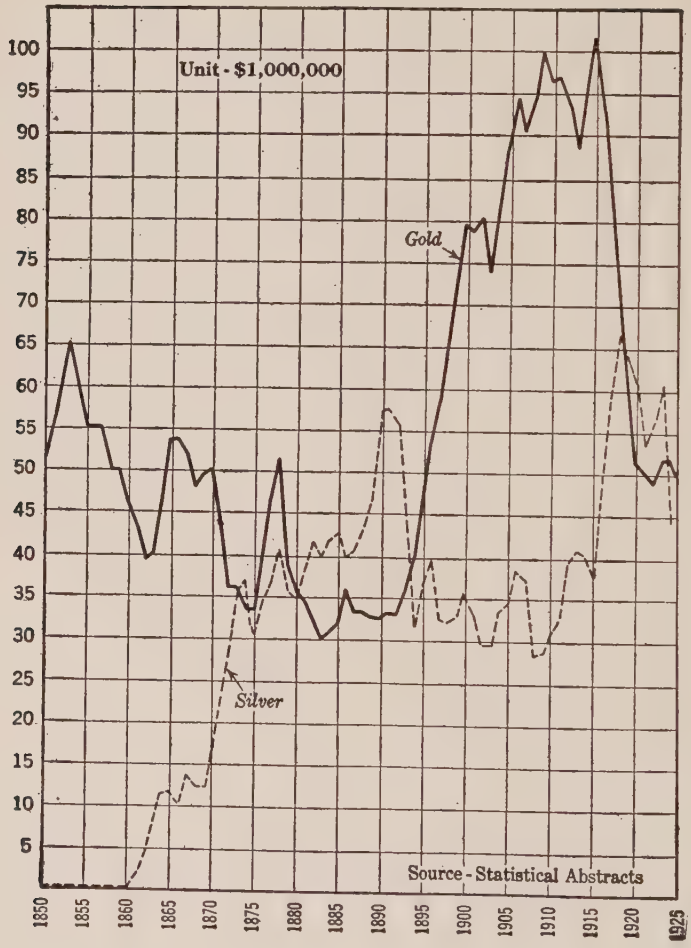


CHART NO. 43. GOLD AND SILVER PRODUCTION.

have crevices designed to catch the heavier gold as it settles to the bottom. This method was once so widely employed in California that streams were choked up and valuable farming land was ruined by deposits of sand and gravel. And so California forbade hydraulic mining, thus

losing some gold but saving the more valuable, because longer-lived, agricultural land. Dredging is still a third method of mining, being practised in California, Alaska, Montana, New Zealand, and elsewhere. A dredge somewhat similar to that used in deepening river channels takes up the earth as it moves forward, runs the material through sluice boxes, retains the gold, and drops the earth. But the most permanent mining consists in working the veins themselves. The ore is generally ground in a stamp mill, after which it is washed much as in the case of placer mining. Because this does not obtain all of the gold, a better method known as the cyanide process has come into use. By it the gold is dissolved out of the ground ores by soaking them in tanks. And now ores are treated profitably for less than $2.50 per ton.

Silver.—Silver was produced to a limited extent prior to the Civil War. In 1859 the Comstock lode, perhaps the world's most famous silver mine, was discovered close to Virginia City, Nevada. The temperature of the mine was 140° Fahrenheit and so ventilation was very expensive. Three shifts of workers drinking ice water by the gallon and perspiring profusely kept the mine going day and night. In the period 1860-1864, speculation was rife, in the late sixties the mine went down, but the new discoveries in 1873 sent it to the heights of prosperity, the output in 1877 being worth thirty-six million dollars. In 1879 Sutro Tunnel, about nine miles long, was dug through the hills to ventilate the Comstock mine. In the period from 1875 to 1877 Nevada's production of gold and silver was greater than that of all the remainder of the country. But prosperity in a mining community is seldom permanent. By 1900 the mines had been virtually worked out and population was declining, but soon after 1900 new mines were opened. Both gold and silver were discovered at Tonopah, in southern Nevada near the California boundary in 1900, at Goldfield twenty-four miles to the south in 1902, and at Bullfrog, about sixty miles southeast of Goldfield, in 1904. The latter was a hundred miles from a railroad, but in three months it had an electric light plant, an ice plant, and a

hotel. And Nevada attained prominence as a gold producer as well as a silver producer. Moreover, the population virtually doubled in the decade 1900-1910.

About eight years after the discovery of gold in Colorado, silver was also discovered and the influence of these discoveries led to the birth almost over night of Denver. According to a journal of the period, whole streets were "built up in less than twelve months' time with brick and frame edifices, and filled from roof to cellar with every production of Anglo-American industry" usable in that market. The Utah mines were developed at a later period, but in 1924 that state held first place in silver production, followed by Montana, where the largest single producer, the Anaconda Copper Company, is located, and Nevada.

Silver, which is extracted from its various ores by smelting or amalgamation, had a value of only $156,800 in 1860, nearly $12,000,000 in 1865, and double that sum in 1871. Since that year the figures, though fluctuating widely, have been above those of 1871, the high point in value being set in 1918 at $66,485,129. The big yields of the seventies and two following decades were responsible in large part for the silver controversy described elsewhere.

Lead.—As early as 1720 lead had been mined in southeastern Missouri and soon after the War of 1812 the lead resources of northwestern Illinois and the adjoining regions of Wisconsin and Iowa were developed. In the early part of the period the use of lead was chiefly limited to the manufacture of shot, white lead, lead sheet, and pipe. Some lead was sent east for use in manufacture, but the chief manufactures were in the states of the Mississippi Valley. According to Professor Isaac Lippincott, over 121,000 long tons were shipped from Missouri mines in the period of 1800-1854, and over 136,000 tons from Galena, Illinois, the collection point for the upper Mississippi, in the thirty year period, 1822-1851. Total production increased from 1,500 short tons in 1820 to 15,600 in 1860 and thereafter as shown by graph. The European War greatly stimulated the demand, as in the case of most mineral products. Missouri, Utah, Idaho, and Oklahoma were the four

leaders in 1925, the northeastern Ozarks with large deposits of low grade ores causing Missouri to produce normally a third of our output.

Zinc.—Lead was widely employed in the electric arts, plumbing, printing, etc., and zinc was used in electric arts, in galvanizing iron to protect it from the weather, and in making various kinds of alloy. Most of the early zinc

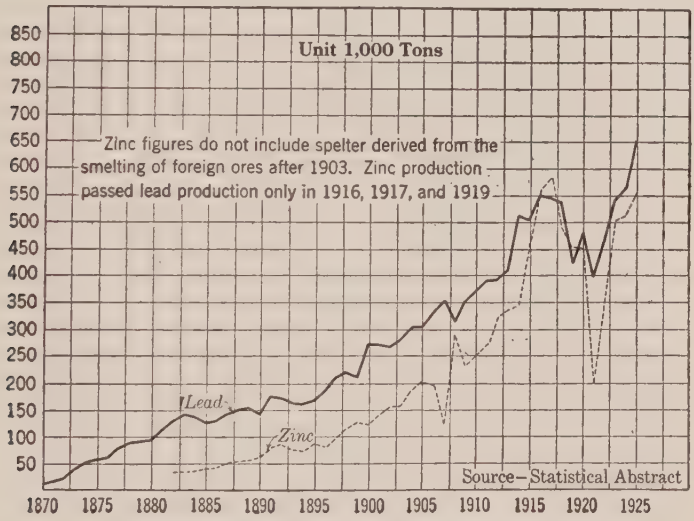


CHART NO. 44. PRODUCTION OF LEAD AND ZINC.

came from Pennsylvania. The leaders in 1924 were Oklahoma, Kansas, New Jersey, and Montana. Missouri, long a leader, chiefly because of the Joplin center in the Ozark region, had fallen to fifth place or lower.

Aluminum.—Aluminum was first separated about 1824, but its commercial use did not become extensive until after 1887. Lightness, comparative toughness, durability, and high powers of resistance are among the most important characteristics of the new mineral product which is now widely utilized for cooking utensils, blades in fans, in scientific instruments, and in producing foil for wrapping

foods and confectionery. It is also widely employed in airplane and automobile manufacture and in electric transmission lines. Cars and trucks are now supposed to

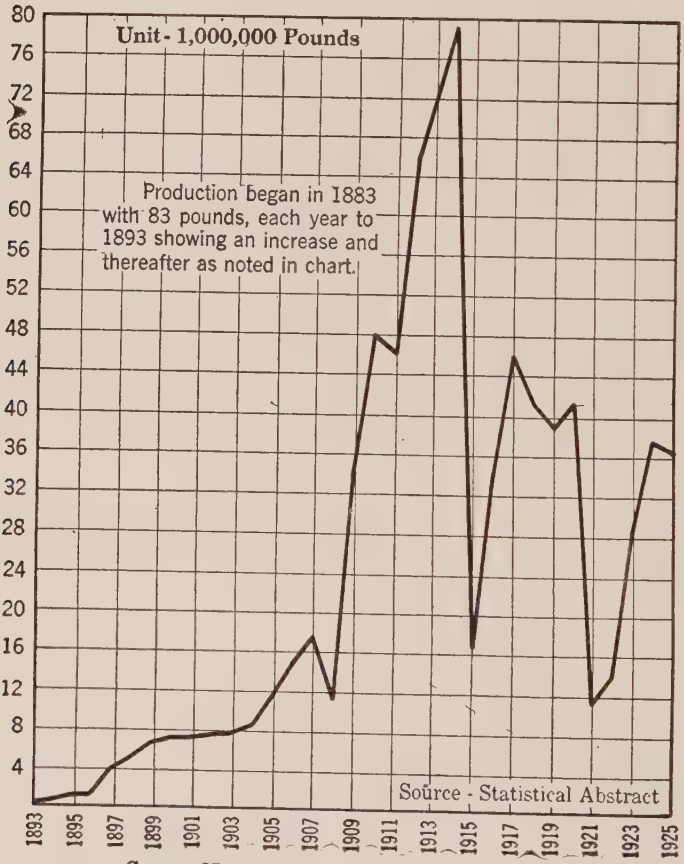


CHART NO. 45. ALUMINUM PRODUCTION.

average about one hundred pounds of aluminum each. During the World War aluminum was extensively used in the manufacture of explosives, cartridges for rifles, shells, helmets, grenades, and, in connection with soft iron, of shell fuses. Bauxite is chiefly used, for it contains some

aluminum along with other elements. It is mined to a considerable extent in Arkansas and Tennessee, but lesser amounts are found in Georgia and Alabama. Nine-tenths of the bauxite mined in 1923 was obtained in Pulaski and Saline counties, Arkansas. The total amount of aluminum increased from eighty-three pounds in 1883 as shown in the graph.

Because aluminum is one of the six most common elements in the earth's crust existing in ordinary clay, great hopes for the future are held. But extraction is difficult and prices are high. In 1880 the price was ten dollars a pound and the world production was only two or three tons. By 1907, due to new methods, the price was down to forty-two cents a pound and in 1923 to twenty-five. World production in that year was 179,000 tons, over half coming from the United States, which was followed by Canada, Norway, and Germany. Manufacture is still very expensive. A plant in East St. Louis uses one ton of bauxite, the aluminum ore, one ton of coal, and one ton of pure limestone to produce half a ton of alumina. This oxide of aluminum is then treated in the electric furnace, about one horse power for a day being required to make a pound of aluminum. And so aluminum will tend to be located where power is cheap. An American company has plants at Niagara Falls which use forty thousand horse power.

Cement.—Cement, merely a mixture of lime and clay burned to expel the water, will, when wetted, absorb water, harden and become durable as rock, lasting for perhaps two thousand years. The Romans were proficient in its manufacture and use, and chunks are still found scattered in the parts of that formerly proud empire. But from that time until the close of the nineteenth century cement was little used. Natural cement, however, was produced in the United States for a good many years prior to the rise of Portland cement, which was patented in England by its inventor, Aspidin, in 1824. Portland cement began to be produced in this country about 1870. It differs from natural cement, according to Professor Malcolm Keir, in that "it is burned at a higher temperature and fuses into a

clinker." Early development was slow, chiefly because the material was poorly made at natural cement factories as a by-product and because its price was higher than natural cement.

Since 1890, the reënforcing of concrete, the rotary kiln, and high-priced wood and iron have inaugurated what has

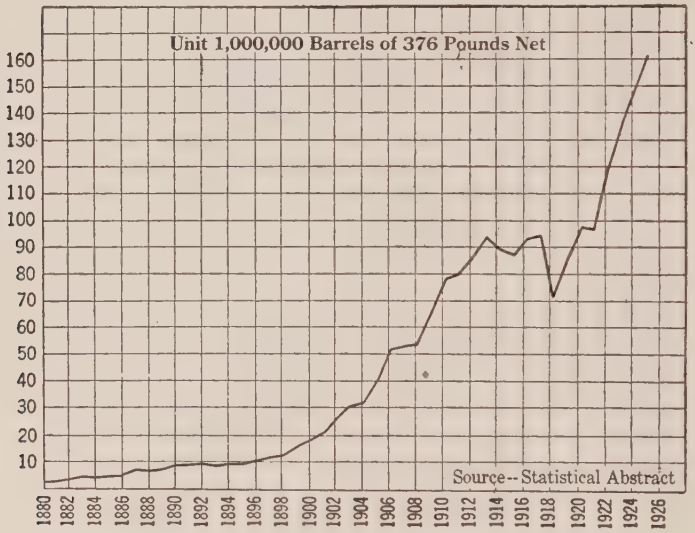


CHART NO. 46. CEMENT PRODUCTION.

sometimes been called the cement age. If reënforced with a skeleton of steel wires and rods, cement can be used almost to the exclusion of other materials in building houses. Until the World War the price of cement went down, while that of steel, iron, and lumber went up. The fact that cement is used now for girders, boats, fence posts, and shingles seems to show that there is almost no limit to its use. Even ships have been made with it. In 1880 we produced little more than two million barrels of 376 pounds each, but recently we have been producing more than a barrel per annum per capita.

Further impetus to the use of cement comes from the

fact that its raw materials—limestone and clay or limestone and shale—are found in every state and that fuel is widely distributed. Cement uses approximately half of its weight in coal. And so Lehigh Valley in eastern Pennsylvania, favored by near-by anthracite, limestone, and shale close together and near the surface and plenty of good labor, is our leading cement section. Less than a hundred miles away are the markets of New York and Philadelphia. But the competition of other centers is cutting down on Pennsylvania's proportion, cement now being a local industry in more than half the states of the union. Cement is made in increased amounts also from blast furnace slag, either with or without the addition of other materials. And thus a practically useless by-product of the iron industry is being turned to account. Pennsylvania, California, and Michigan were our cement leaders in 1925.

Building Stone.—Building stone has been quarried in the United States almost from the earliest history, but only since the Civil War has it been very important commercially. The exhaustion of lumber for building purposes then caused man to turn to the earth's crust for materials. Because of weight and wide distribution, quarrying, like brick-making, tends to be a local industry close to the markets. But occasionally stones of particular merit or of marked accessibility give rise to important industries. Along the New England coast, where glaciers exposed the slate, limestone, and granite, such industries have developed, for vessels can come in close to the quarries. Vermont is the leader in granite, its material for monuments being shipped great distances, and its marble is about double that of Tennessee or Georgia. At Rutland in south Vermont is one of the most important marble industries in the world, the rock being cut and lifted by mechanical means. Massachusetts is the second granite producer; Maine and New Hampshire are also important. In the Great Lakes region, particularly Huron, in parts of Appalachia, Georgia, Tennessee, and Colorado much marble is available, though the reputation is not equal to that of the

famous Italian statuary marble of Carrara. But the beautiful American marble is much less important than more vulgar stones and its value is less than the hard trap rock which is crushed for the surfacing of roads. Common limestone widely distributed, with the Indiana or Bedford product the most noteworthy, is used for road making, concrete, railroad ballasting, and construction work.

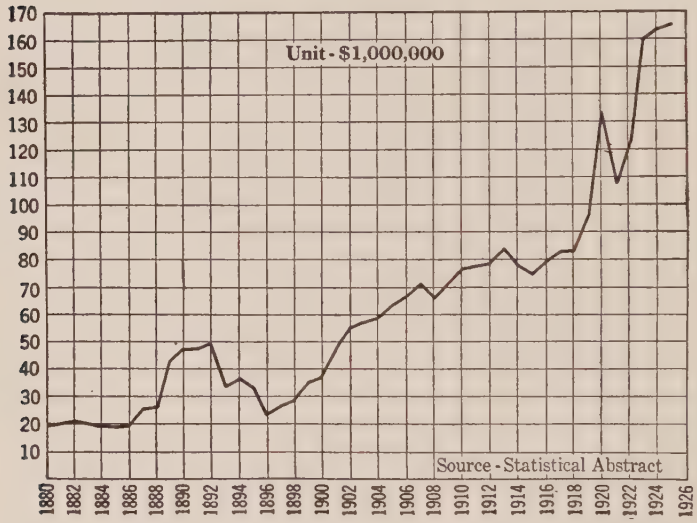


CHART NO. 47. VALUE OF BUILDING STONE.

In 1880 the total product was valued at $18,356,055 and the worth since then has never been less. Of the $101,-684,919 census value in 1919 the Middle Atlantic, East North Central, and New England divisions in the order named produced about two-thirds. Limestone contributed more than half of the total; granite, over half of which came from New England, gave nearly a fifth; sandstone about a tenth; basalt nearly as much; and slate and marble lesser amounts. The figures, of course, include building and monumental stones and the materials for paving, curbing, flagging, rubble, etc. Sand and gravel, widely scat-

tered but especially important in Pennsylvania, Ohio, Illinois, and New York, are nearly as valuable.

Fertilizers.—Although fertilizers are classified under chemical industries and are of importance primarily in

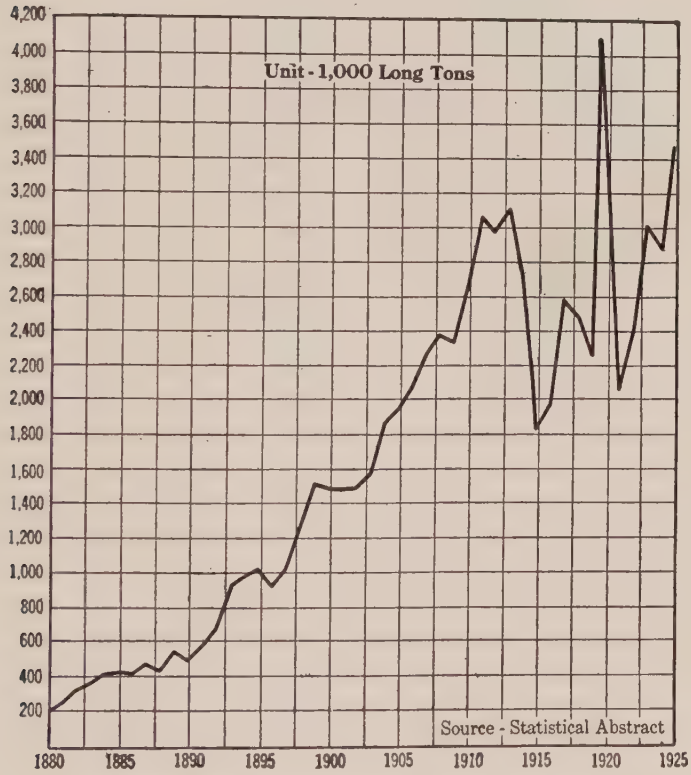


CHART NO. 48. PRODUCTION OF PHOSPHATE ROCK.

agriculture, they will be considered here. Phosphorus, potassium, and nitrogen often exist in the soil in insufficient amounts and all three are necessary to plant life. Guano, the bones of animals, and slaughter house refuse, contribute to the phosphates as does basic slag, the limestone linings of furnaces drawing the phosphorus from the iron and

steel. But the chief source in the United States is the phosphate rock, usually found near the surface and easily dug from pits. The industry started near Charleston, South Carolina, but development has gone farthest near Tampa, Florida, that state producing about five-sixths of our output. So far the most extensive deposits are those of Montana, Idaho, Utah, and Wyoming, which are thought to contain six billion tons of high grade rock. The phosphorus is dissolved by sulphuric acid. Germany has almost a world monopoly of potash, but our salt beds running from Salina, Kansas, to New Mexico, may yet duplicate the German deposits. War, by shutting off the German supply, caused our production of crude potash to jump from 4,000 tons in 1915 to 207,000 in 1918. A large part of this output came from the natural brine lakes of Nebraska, California, and Utah, but part came from kelp or seaweed, of which we have several hundred square miles off our western coast. Nitrogen comes from animal refuse, ammonia, a by-product of the coke industry, beans and leguminous plants, the air, and mines. Although Chile has a virtual monopoly of nitrate of soda, some is produced in the deserts of northern India, in Death Valley, California, and other deserts of California and Nevada. In our western deserts close to the surface the nitrate is found as a white crust in connection with borax. It merely has to be hauled away and refined.

Sulphur and Soda-Ash.—Closely connected with the industries just noted are sulphur and soda-ash. Sulphuric acid, the most important of the acids, is produced to the extent of six million tons a year. Most of our deposits are on the Gulf coast in Texas and Louisiana. The sulphur is melted by forcing down into the ground heated water which is then pumped out. The United States produces about three-fourths of the world's output. Sulphuric acid, as previously noted, is also a by-product of the copper smelters. Soda-ash is nearly as important as sulphuric acid. In Nevada are some desert lakes with large amounts of soda which may be obtained by evaporating the water. The sodium of the soda-ash comes from the common salt,

either as brine from salt springs, or by the method of forcing water down through the earth over the salt and then pumping it out. Because coal, coke, and limestone are used in manufacturing the product the factories are generally located where both salt and limestone are found.

Salt.—The salt industry in colonial days had been carried on chiefly by the evaporation of salt water, about 250 gallons of water being evaporated to obtain one bushel of salt. Water was carried or pumped from the sea by means of windmills—such as those on Cape Cod—and the salt

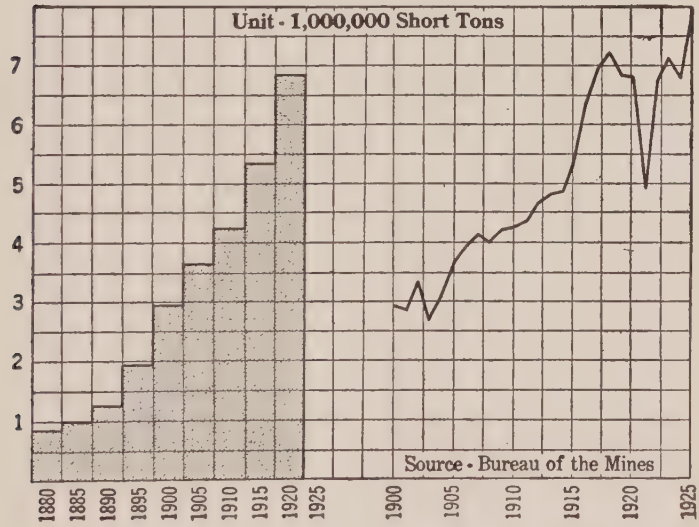


Chart No. 49. Salt Production.

was obtained by boiling in large kettles. In recent years about one-third has been manufactured, one-third in brine, and one-third rock salt. Total production increased eightfold from 1880 to 1920. New York, Michigan, Ohio, and Kansas are the usual leaders.

Minor Products.—Some of the miscellaneous products which we may note briefly are nickel, quicksilver, and mineral waters. Nickel to the amount of 2,348 tons and worth

$28,176 was produced in Pennsylvania for the year ending June 1, 1860, but the output now is normally less than a tenth that amount with a value four or five times as great. The production of quicksilver has also gone downward, from 60,851 flasks of seventy-five pounds each in 1881, with some fluctuations, to a sixth of that amount in 1924 and 1925. Mineral waters increased rather steadily from about 2,000,000 gallons in 1880 to 64,674,486 in 1909, since when a decline of about a third has occurred. Wisconsin, New York, California, and Maine are the usual leaders.

The minerals described are those which have usually been considered the most important, but many others have experienced a rapid growth and are valuable out of proportion to their cash price in the markets. Tungsten, for instance, is very important in the manufacture of certain kinds of steel, as in manganese. Mercury, antimony, bismuth, and other products enter into various manufactures.

Although the United States is more nearly self-sufficient than any other country in raw materials, we cannot get along without the products of other nations. Each ton of steel, for example, requires fifteen pounds of manganese, whose monopoly is virtually held by India and Brazil. At one time during the World War the president of the United States Steel Corporation declared that the entire steel industry would be compelled to close down in six months if manganese were not obtained from Brazil. Chromium and vanadium, which we import, are absolutely necessary alloys for the manufacture of high-speed tools, automobile and airplane steels, armor-plate and projectiles, and steel castings exposed to heavy strains. Even in sulphuric acid platinum is indispensable, as it is in many manufactures, laboratory equipment, surgical implements, etc. Russia and Colombia have a monopoly of the platinum supply.

Values.—The total value of all mineral products has increased many fold in the last fifty years, five-fold from 1870 to 1900 and six-fold from 1900 to 1920, but the latter year with a value of about $6,950,000,000 has not been reached since, though 1923 was within striking distance. In recent years much of the value has been due to the infla-

tion. If, however, we take 1919 as our year for comparisons we find a census value for continental United States of $3,158,463,966. Pennsylvania, with a product worth $819,451,109, was easily in first place, as usual; West Virginia and Oklahoma vied with each other for second place; Illinois, California, Texas, Ohio, Minnesota, and Michigan were the only other states with a product worth more than $100,000,000, though Kentucky and Kansas were both close to that mark. In that year 21,280 enterprises, larger

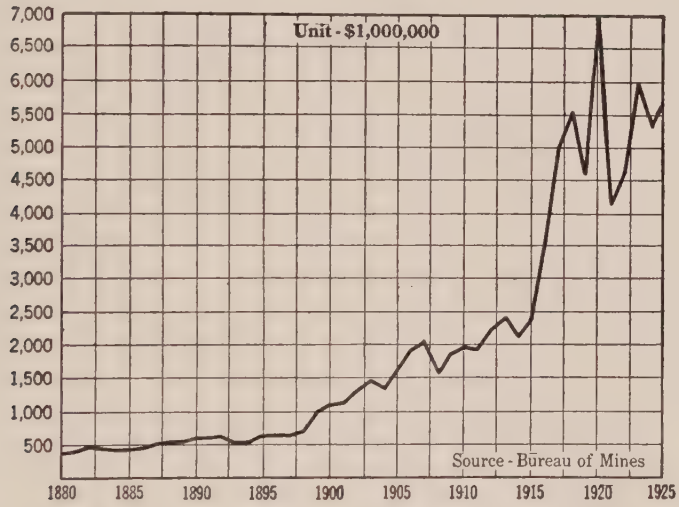
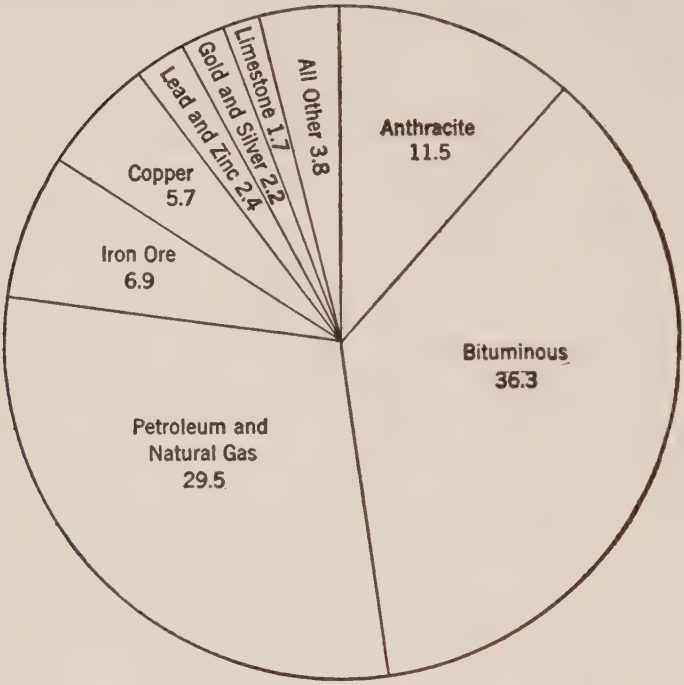


CHART NO. 50. VALUE OF ALL MINERALS.

than in former years, employed an average number of 981,560 wage-earners, of whom seven-tenths were engaged in coal mining. Judged by total value the mineral fuels, with coal the leader, contributed nearly four-fifths, iron ore over one-fifteenth, and copper about one-sixteenth. No other product contributed as much as one-fortieth of the value, and only lead and zinc combined, gold and silver combined, and limestone in that order furnished more than one per cent of the value of all mineral products.



Source - Bureau of the Census

CHART NO. 51. PERCENT DISTRIBUTION OF MINERAL VALUES IN 1919.

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CHAPTER XIII

THE MERCHANT MARINE, WINNING OF COMMERCIAL INDEPENDENCE, AND FOREIGN TRADE

Colonial Shipbuilding.—In the colonial period one of the most important industries was shipbuilding, but it was a small scale enterprise and the boats were pygmies in comparison with present-day steamers. We should, however, bear in mind that all boats of that period were small. According to Hume, only 217 of the 1232 vessels which belonged to Great Britain in 1582 were above eighty tons "burthen" and five years later there were only five vessels in England whose size was above two hundred tons. Only one of Columbus's vessels had a deck. The *Mayflower* was a ship of 180 tons, Hudson's *Half Moon* of eighty, and the *Squirrel,* in which Sir Humphrey Gilbert and his crew perished in 1583, of just ten tons.

The colonies were especially favored by an abundance of raw material, of which the New England pine, oak, and maple, and southern live oak and cedar were most widely employed. Most of the shipyards were in New England, where, according to Strachey, the first ocean-going vessel, a bark of thirty tons, was built by the Popham Colony at the mouth of the Kennebec in 1607. Shipbuilding was attempted at Plymouth in 1623, three years after settlement, but according to George Henry Preble the first vessel, the *Blessing of the Bay*, was not launched until 1631. Ten years later, the first boat of any size, forty or fifty tons, and costing two hundred pounds, was completed and in the same year inspection was provided for:

> Whereas the building of ships is a business of great importance for the common good, and therefore suitable care ought to be taken that it be performed, according to the commendable course

of England and other places: It is therefore ordered by this court and the authority thereof; that when any ship is to be built within this jurisdiction, or any vessel above thirty tons, the owner, or builder in his absence, shall before they begin to plank, repair to the governor or deputy governor or any two magistrates, upon the penalty of ten pounds, who shall appoint some able man to survey the work and workmen from time to time as is usual in England, and the same so appointed shall have such liberty and power as belongs to his office . . .

And those viewers shall have power to cause any bad timber, or other insufficient work on material to be taken out and amended at the charge of them through whose fault it grows.[1]

Boston and its vicinity, the center of colonial shipbuilding, according to Hutchinson, had in 1676 thirty vessels between 100 and 250 tons, two hundred between fifty and a hundred, two hundred between thirty and fifty, and three hundred between six and ten. In 1698 Lord Bellomont declared: "I believe I may venture to say there are more good vessels belonging to the town of Boston, than to all Scotland and Ireland, unless one should reckon the small craft, such as herring boats."[2] In 1714-1717 Massachusetts had 492 vessels with a tonnage of 25,406, which employed 3,493 sailors. By 1763 New England was exporting annually about seventy ships, New York twenty, Pennsylvania twenty-five, and Virginia and Maryland thirty. The main reason for the exportation of ships lay in the fact that they could be built for from $24 to $34 a ton here, while the cost in western Europe was about $50 a ton. In 1771, 419 vessels with a tonnage of 24,068 were constructed. Little more than a fifth of the tonnage was built south of Pennsylvania. In 1775 nearly 400,000 tons, or approximately one-third of the tonnage flying the British flag, was colonial-built. In the same year there were about 2,000 American ships manned by 33,000 sailors.

Effect of Revolutionary War.—The Revolutionary War had a harmful effect upon our foreign shipping, as foreign-built tonnage was substituted for American in the English

[1] *New England Historical and Genealogical Register and Antiquarian Journal*, Vol. XXIII, 38, 39.
[2] *Ibid.*, Vol. XXV, 16.

marine. Before the war nearly a third of the British vessels were colonial built, but at its close less than one-sixth, and, according to Champion, the proportion of American tonnage fell from more than one-third to less than a fourth. The use of our ships was restricted in the English trade, and the British West Indies were closed to them. Phineas Bond, British consul at Philadelphia, declared that shipbuilding went on rapidly for a while after the war in the eastern and middle states, but the restrictions imposed on commerce disheartened the merchants and deprived many shipbuilders of employment. And so for a few years shipping experienced a depression.

Revival of Ship Construction.—About 1788 and 1789, however, a revival began chiefly because of the prospect of good government, scarcity of food in Europe, large crops here, and a lack of vessels to carry products, the extension of the China trade, and the drawback of ten per cent in duties on goods imported in American vessels. Duties on tea brought directly from the Orient in American ships were only about half those on tea brought in foreign vessels or in American if coming from London. A Federal law of 1789 discriminated in favor of American shipping by levying a duty of only six cents a ton upon American-built, American-owned vessels as compared with thirty cents on American-built foreign-owned, and fifty cents on all others. Although foreign vessels were not excluded as yet from the coastwise trade, they were taxed fifty cents a ton every time they entered an American port, whereas American vessels paid a duty of only six cents a ton once each year.

Still another cause which stimulated construction here was the low cost, for, if Tenche Coxe was correct, the ships built in France cost from $55 to $60 a ton, while the best American live oak and cedar ships cost from $33 to $35. In all probability the cost of shipbuilding in every important country of Europe was about fifty per cent more than here. An American vessel of 250 tons cost about two thousand pounds; a British vessel of similar size cost twice as much. Moreover, the cost of operation was esti-

mated at half as much by an English Parliamentary committee, or £513, 14s. 4d. to £1083, 8s. 8d.

The European wars stimulated tonnage in a marked way. In the period from 1803 to 1807 the average freight earnings of American vessels were about $32,500,000 per annum. In the period 1789 to 1807 tonnage enrolled in the foreign trade advanced from 123,893 to 848,306. From 1798 to 1812 over 200,000 tons of American shipping were sold abroad. There were, of course, periods of relapse; thus, as pointed out by Adam Seybert, the Treaty of Amiens in 1802 stopped the war temporarily and allowed the renewal of the European trade by the former fighters. Concerning this period Timothy Pitkin wrote:

> The increase of the tonnage of the United States has been without example in the history of the commercial world. This has been due to the increased quantity of bulky articles of domestic produce exported, to the increase of their population, and to the extent of their carrying trade.[3]

Effect of Embargo and War.—The American embargo, 1807-1809, by prohibiting exportation of products to foreign countries, in an effort to force England to repeal her Orders in Council and France her Berlin, Milan, and other decrees, discouraged ship construction, which fell from almost 100,000 tons in 1807 to slightly less than a third of that amount in 1808. Thirty thousand sailors, or three-fourths of the number in the entire country, were deprived of employment and many left the country. In 1809 the Non-Intercourse Act opened trade with all foreign countries except England and France, and in May, 1810, "Macon Bill No. 2" repealed the Non-Intercourse Act and provided that if either France or England revoked the objectionable orders and the other did not within three months, non-intercourse would be revived with the country which refused. Napoleon pretended to repeal his decrees, and in February, 1811, non-intercourse was revived with England. The War of 1812, provoked by the *Chesapeake-*

[3] *Statistical View of the United States of America* [New Haven, 1828] 387.

Leopard affair, British insolence, and the various Orders in Council declaring the coast of Europe under Napoleon's control blockaded, had a bad effect on our tonnage, which, with a temporary revival, following the repeal of the embargo, stood at 984,269 tons in 1810, but fell to 674,632 in 1814.

Tonnage continued to decline after the war and in 1830 rested at only 577,268. Carrying trade was not very profitable and some vessels were sold. Money was diverted to manufactures and internal improvements, more profitable undertakings. Another factor entering into the decreased shipping was the protective tariff, which by levying duties on commodities entering into ship manufacture injured the shipbuilding industry. Protection, moreover, stimulated manufactures and thus tended to reduce the products to be carried. It is likewise well to note that England, with whom most of our commerce was transacted, attempted to monopolize the carrying trade.

Growth, 1830-1860.—Among the factors responsible for the big increase, more than fourfold, from 1830 to 1855, and we might note that in general factors which increased our tonnage had a similar effect on our commerce, were the population growth, the development of export crops, treaties, the China War, the Mexican War, the Irish famine, the Crimean War, the Clipper Ship, and favorable legislation. Our population had scarcely doubled while our tonnage had trebled. Our people pushed westward, and our export products, such as cotton, tobacco, rice, and various foodstuffs, increased materially. Treaties which guaranteed reciprocal trading privileges were negotiated with France in 1822, with Prussia in 1828, and with Hamburg, Bremen, Lubeck, Norway and Sweden, Austria, Russia, Portugal, Holland, Belgium, Switzerland, and some of the Central and South American states a little later.

The treaty with England in 1830 which removed restrictions on the West India commerce, began to bear fruit toward the close of the period in increased shipbuilding In 1844 Caleb Cushing negotiated a treaty with China which gave the United States equal commercial privileges

with England, and about ten years later Perry opened Japan to western civilization and commerce. The Opium War, 1840-1842, forced on China by England in the interest of India poppy growers whose product was being barred, opened five ports to world commerce. The Mexican War, 1846-1848, through the need of transports, slightly stimulated shipbuilding, and the Crimean War, 1854-1856, by seizing the interest of such important countries as England, France, Italy, and Russia, gave our ship owners high temporary profits and thus stimulated ship construction. Of a similar effect was the Sepoy Mutiny of 1857 which engaged England's attention. The Irish famine, with the repeal of the English corn laws in 1846, furnished a market for American agricultural products and supplied vessels with a return cargo of immigrants. Still other stimuli applied in this period were the gold discoveries in California and the Revolutionary outbreaks in Europe in 1848.

The American Clipper.—The invention of the American clipper ship is probably deserving of a separate paragraph or two. This vessel differed from its predecessors in the hull especially, for the greatest width was in the middle part of the vessel rather than in the forward part. The boat, because of the long narrow bow, could cut through the water with less resistance than other vessels and great speed was consequently obtained. In 1825 a vessel of the later clipper type made a trip from New York to Liverpool in thirteen days, and later one of them reduced the time to nine days. Professor T. W. Van Metre declares that the first clipper boat, the *Rainbow,* was built in 1845 and made the trip between New York and Canton in three weeks' less time than any other boat had ever done. The gold discovery in California placed a premium on speed, and in 1851 the *Flying Cloud* made the trip from Sandy Hook to San Francisco in eighty-nine days, a record seldom equalled. The *Flying Scud,* a seventeen-hundred-ton boat in the Australian trade, usually made the voyage to Australia in seventy-six days, and in 1854 ran 449 nautical miles in a day, or over eighteen miles an hour. The clippers often

made three trips across the Atlantic while the ordinary vessel was making two, and in 1850 and even later, with favorable conditions, made better speed than the steamboats.

A "clipper fever" naturally attacked shippers, and large numbers of boats were sold abroad. From 1854 to 1858 inclusive foreign sales amounted to 244,700 tons, or about one-fifth of the entire amount constructed; averaged at one hundred dollars a ton, foreign sales amounted to $4,895,000 annually. In 1855, the banner year, 2,034 vessels with a tonnage of 583,450 were constructed. This, however, was excessive and reaction set in. Clippers even in the period of their great popularity labored under two great disadvantages. In the first place, they could not, because of the tapering of the sides to a point, carry as much freight as the older vessels; and in the second place, because of the fact that in foreign ports the top width was often considered as extending to the bottom, they were compelled to pay excess tonnage duties.

Legislation.—The protective tariff system, generally followed from 1816 to 1846, handicapped the growth of the merchant marine, but the Walker Tariff of 1846 coupled with the repeal of the English corn laws in the same year and the low tariff of 1857 stimulated ship construction. Even more important for a while at least was the policy of the national government in encouraging ship construction through subsidies, or grants of money more than sufficient to cover the cost of the service rendered. England started the policy with the Cunard Company in 1839, and the United States soon followed her example by subsidizing a line from New York to Havre and Bremen and a little later the famous Collins line which plied between New York and Liverpool. Although this line was offered only $385,000, the subsidy was increased to $858,000 in view of the fact that the vessels built were better than the contract stipulated; its boats, the *Arctic, Baltic, Atlantic, Pacific,* and later the *Adriatic,* were the best afloat. The Collins line early engaged in successful competition with the Cunard line and because freight rates soon fell from seven

pounds, ten shillings a ton to four pounds Congress saw a practical verification of its subsidy policy and extended it to other lines, among which were the Pacific Mail around South America, the Law line to Colon, and the Aspinwall from Panama to San Francisco.

The South and West, however, did not like the shipping policy, for they viewed with alarm northern prosperity and believed that they were taxed to support at a cost of more than $1,500,000 a policy whose benefits accrued only to the Northeast, a belief strengthened by the fact that only one of the subsidized lines, Charleston to Havana, touched the South. This growing opposition led to the reduction of the Collins subsidy from $858,000 to $385,000 in 1856, but the loss of the *Arctic* in 1854 and of the *Pacific* two years later was also partially responsible, for Collins could not fulfill his contract. Financial loss and subsidy cut forced him into bankruptcy in the Panic of 1857. Southern opposition, it should be observed, found its counterpart in the North, for many shipowners believed that the steamship would never supplant the sailing vessel. In 1858 the various elements of dissatisfaction combined, and Congress practically dropped the subsidy policy by limiting all payments to the postage, sea and land, on the mails carried. The immediate effect was the sale of the remaining vessels of the Collins line to English companies and the capture of the transatlantic steamboat service by the British. In spite, however, of the abandonment of subsidies, the steamboat service between New York and Chagres, Panama and Oregon increased. Several new steamers were added to the Atlantic and Pacific lines, and a railroad was opened across the isthmus.

Steamboats.—The opposition to steam power just referred to was not unusual, for practically all inventors have felt it. Robert Fulton, in describing his successful trip on the Hudson with the *Clermont* in 1807, said that "there were not perhaps thirty persons in the city who believed that the boat would ever move one mile an hour or be of the least utility." In 1811 the first steamboat was built on the Ohio, and though one appeared on the Mis-

sissippi in 1812, not until three years later was one able to make head against the current. Not until 1816 did a steamer appear on Lake Erie or any of the Great Lakes, and not until several years later on the Atlantic. Possibly the first steamer to cross the Atlantic was the *Savannah* in 1819, but the power was chiefly sail, though the paddle-wheel could be moved by steam. In the same year a somewhat similar vessel made trips between New York and Charleston, Cuba and New Orleans, and six years later the British *Enterprise* made a voyage to the East Indies. In 1833 the *Royal William* went from Quebec to Liverpool entirely by steam; in 1838 the *Great Western* made the trip from Bristol to New York in fourteen days and twelve hours, and the next year the *British Queen* made the trip from Portsmouth to New York in fourteen days and eighteen hours. A little later the famous *Acadia* of the Cunard line made the trip from Liverpool to Boston in twelve days and twelve hours.

This time seems twice too long to us, but we must bear in mind that it took Columbus seventy days to go from Palos to San Salvador, and the Pilgrims sixty-five days to go from Plymouth to Cape Cod. A calculation for ten years showed that the average time for sailing vessels from Liverpool to New York was thirty-six days and from New York to Liverpool twenty-four.

An article in *Hunt's Merchants' Magazine* as early as 1840 pointed out the following effects of the steamboat on industry:

> The effects on the commerce and prosperity of the United States, which must follow the establishment of these lines of steam-packets, cannot fail to be important. The certainty and despatch with which their voyages are performed, will turn an immense amount of business into new channels, and multitudes who have hitherto transacted their business abroad, through agencies and correspondents, will now cross and recross the Atlantic, as many times a year, perchance, with as little deliberation, as formerly attended their journeys from Maine to New York, or from New York to New Orleans. As an illustration of the advantages offered, not only to the city, but the interior

and remote sections of country, connected by railways and river-steamers with the commercial marts, the fact may be stated, that a person at Chicago, in Illinois, 1200 miles from New York, may, by means of existing steam accommodations, actually reach Liverpool or London, in nineteen days from Chicago! The Journal of Commerce recently furnished another illustration of the advantages to be derived from the increased facility of communication, and despatch of merchandise. An order was sent from New York to England on the first of July. The goods were bought in London, sent to Bristol by land, reached here, were sold, and the proceeds remitted back by the *Great Western,* and would probably be in London about September 1st. So these three crossings of the Atlantic, with the transaction of the business, and eleven days lost by delays in waiting for the steamers to start, will all consume but two months. It is probable that letters sent from Liverpool by the *Acadia* will receive answers by the *Great Western* in just about twenty-five days. Money employed in the traffic between Europe and America can now perform about four times as many operations as it could two years ago. The profits on each operation may be reduced, but there will be greater certainty and stability in the markets.[4]

By 1850 the amount of steam tonnage had increased to about forty-five thousand, but the period of the late forties and the fifties was preëminently that of the Yankee clipper, as already noted, and so the Americans clung to the use of sails even more tenaciously than the English did. The very speed of the Yankee clipper was, consequently, a drawback in the long run to the American shipping interests.

Use of Iron Ships.—Another improvement widely followed in England was the use of iron in ship construction. England had been using coal for smelting since 1750, and the United States up to 1860 and later was at a disadvantage. England, therefore, obtained iron steamships and secured a large part of the American carrying trade. Even earlier than 1835 Great Britain had used iron, for the exhaustion of wood coupled with the abundance of iron caused her shipbuilders to seize eagerly upon new methods.

[4] October, 1840, Vol. III, 304.

On the other hand, the abundance of wood joined with inferior iron and skill caused the Americans to persist in the use of wooden vessels. The slowness to grasp effectively the new methods joined with the failure of the subsidy policy and Congressional legislation prohibiting the

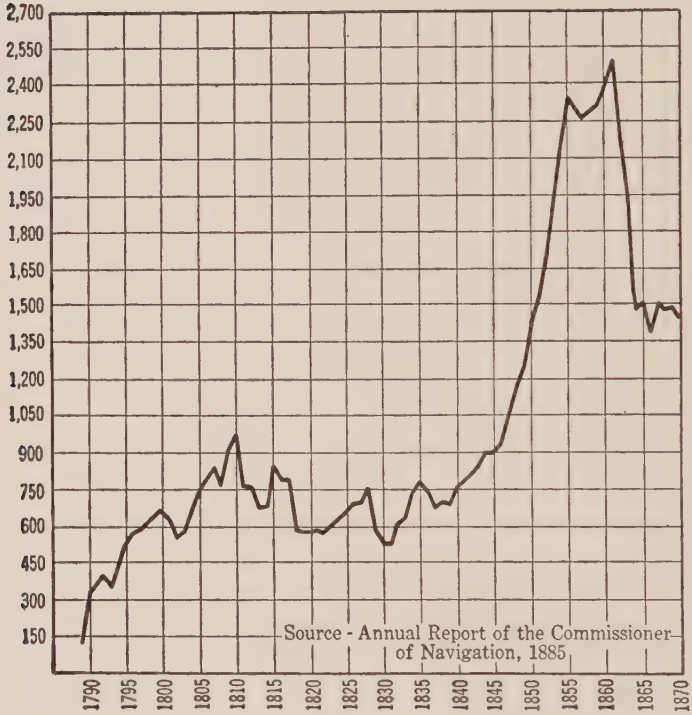

Chart No. 52. Registered Tonnage in Foreign Trade.

importation of foreign-built vessels played an important part in preventing the United States from wresting world supremacy from England in the merchant marine.

Conditions Since 1860.—From 1861 to 1898, when the low tonnage of 737,709 was registered, the general movement with some fluctuations was downward. During the next ten years the movement was slightly upward, but

1910 saw a reduction to 791,825, and not until 1913 did the tonnage pass 1,000,000, and not until 1916 2,000,000. Development thereafter was rapid, and in 1921 the tonnage amounted to more than 11,000,000. Since 1921 the tendency has been downward; in 1925 it was about 8,151,000.

The Civil War injured our marine in a marked way,

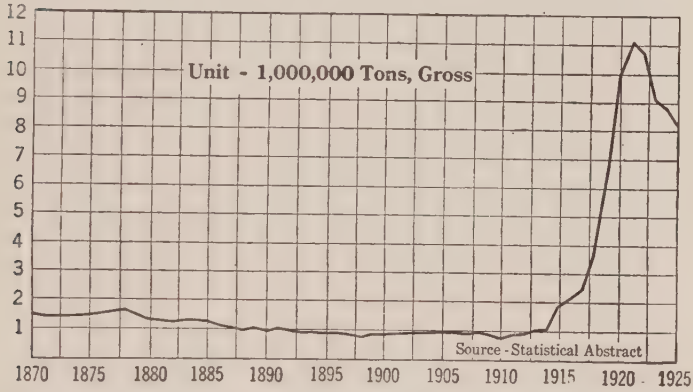

Chart No. 53. Tonnage in Foreign Trade and Whale Fisheries.

for we lost about a million tons of shipping. When the southern states discovered that they were unable to break the northern blockade and sell their cotton abroad, they decided to retaliate by fitting out swift cruisers to destroy northern shipping. In this object they were actively aided by some of the European countries, especially England, which helped the South through allowing her shipbuilders to equip such boats as the *Alabama*, *Florida*, and *Shenandoah*. All told, 261 northern vessels were captured. Even more important, however, than the depredations of the Confederate cruisers was the fear of capture which led, because of the high insurance rates and small profits, to the sale of vessels to foreigners who could sail them safely under a neutral flag. After the war had closed these vessels were not allowed to reregister under the American flag.

Possibly a gradual recovery would have occurred had

it not been for the use of improved methods. The steamers gained rapidly on sailing vessels and the iron on wood; consequently the Americans who had neither the resources nor the experience to compete with the English in the new methods lost rapidly. The protective tariff adopted during the war led to a heavy increase in all kinds of taxes and naturally increased the cost of construction beyond that of pre-Civil War times and, moreover, beyond that of English costs. Again, the development of the West led those with money to invest to place their capital in western railroads as more profitable and thus hastened the abdication of the ocean. In 1900 less than one-fifth of the tonnage which cleared from our seaports for foreign countries was American, a rather disgraceful contrast with the nine-tenths of a hundred years previous. Among those who called attention to this situation was President McKinley, who declared:

> The value of an American merchant marine to the extension of our commercial trade and the strengthening of our power upon the sea invites the immediate attention of Congress. Our national development will be one-sided and unsatisfactory so long as the remarkable growth of our inland industries remains unaccompanied by progress on the seas. There is no lack of constitutional authority for legislation which shall give to the country maritime strength commensurate with its industrial achievements and with its rank among the nations of the earth.[5]

In 1912 Congress modified our shipping laws so that foreign vessels not more than five years old might register under our flag, and two years later threw open American registry to all shipping. Although these measures helped slightly, almost the sole cause for the remarkable growth in recent years was the war. When it began, British, German, and Norwegian vessels filled our wharves and carried most of our commerce. English shipyards were building vessels at forty per cent lower cost than America and were operating them at a similar advantage. The coast-

[5] Richardson, J. D. *Messages and Papers of the Presidents*, Vol. X, 134.

wise traffic of about six million tons alone saved some of our shipyards from ruin. In 1914 we carried less than a tenth of our commerce in our own vessels in comparison

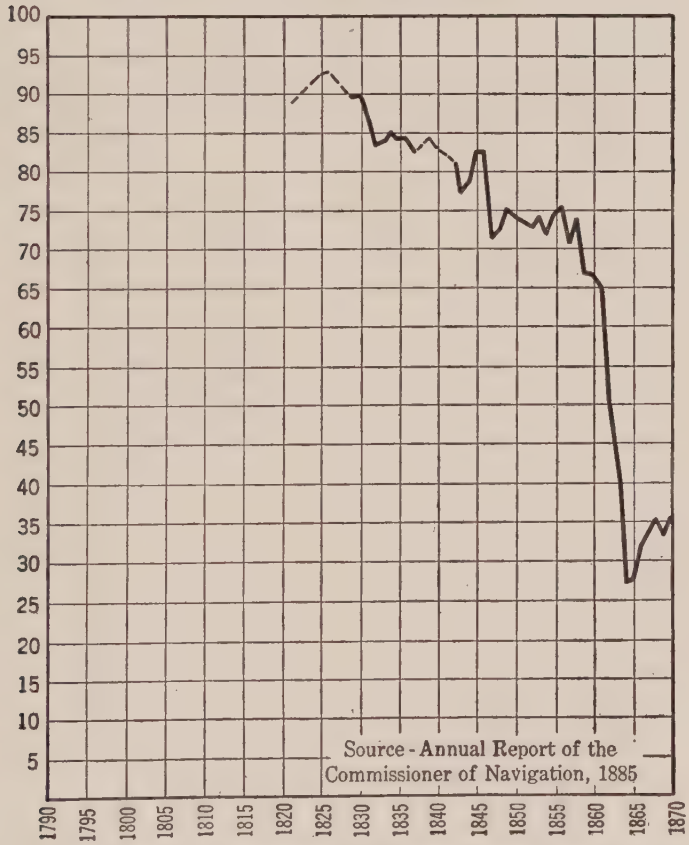

CHART No. 54. PERCENTAGE OF FOREIGN TRADE CARRIED IN AMERICAN VESSELS.

with more than nine-tenths in 1810. In 1914 only one ton of American shipping flew the red, white, and blue for every seventeen tons that flew the "red duster" of the United Kingdom.

When the United States entered the war in 1917 a veritable fever of construction began, for we needed ships to transport men and supplies to Europe. The Shipping Board was already in existence, and its agent, the Emergency Fleet Corporation, was created April 16, 1917. In normal times steel ships were produced for $50 a ton, but in the war period cost went to $300 a ton and seldom fell below $225. According to Ralph D. Paine, the United States paid four billion dollars to create a fleet of less ton-

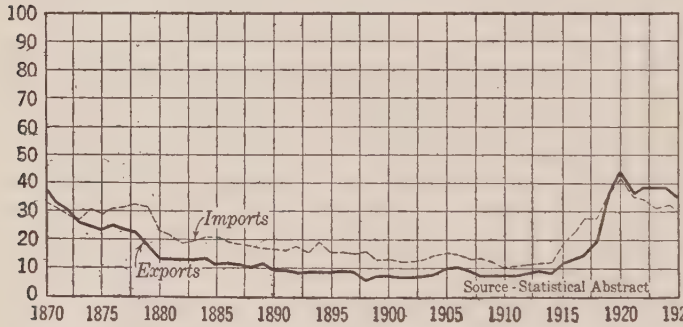

Chart No. 55. Percentage of Exports and Imports Carried in American Vessels.

nage than, and of inferior carrying capacity to, one the British had built for a fourth of that sum. Nevertheless, by 1919 we carried forty-two per cent of our commerce, fifty per cent of imports and thirty-four per cent of exports in our vessels, and ranked within striking distance of Great Britain. This result was one of the good effects of the war and in 1921 nearly two-thirds of our eighteen or nineteen million tons of gross shipping were in the foreign trade. The tonnage was more than ten times as much in 1921 as in 1914, but less than eight times as much in 1926.

In 1900 less than half the tonnage in the foreign trade was steam, but within twenty years it had increased to over nine-tenths. We might note that, in recent years, many of our ships are using petroleum in place of coal as fuel. As late as 1900 only half of the tonnage was iron and steel, but

twenty years later it had risen to nine-tenths. Meanwhile vessels have increased materially in size. In 1900 the average size of a steamer was only 480 tons, but in 1922 it was 4,335. The modern freighter now has a tonnage of about 6,000 while many go far beyond that. Even yet approximately half of the tonnage is owned on the Atlantic and Gulf coasts, chiefly the former, but in recent years the Pacific region has developed rapidly in both construction and ownership.

On July 9, 1916, the commercial submarine, *Deutschland,* reached Baltimore with a cargo of dyes and other products. She was the first submarine to cross the Atlantic by aid of her own power and fuel, though as early as 1801 Fulton had experimented with submarines more or less successfully.

Colonial Exports.—Our exports in the early period were chiefly agricultural or forest products, or food. From New England they were fish, furs, and lumber; from the Middle Colonies, foodstuffs and furs; and from the Southern Colonies, tobacco, rice, and naval stores. In 1721 tobacco made up about half the value of all exports; pitch and tar, logwood, rice, skins and furs, turpentine, brown sugar, train oil, and whale fins followed in order. In 1763, of New England's exports valued at £485,000, £250,900 were contributed by the fisheries; for the four years 1763-1766 New York's exports averaged £526,000, and of this amount £418,500, or about four-fifths, represented products of the soil; for a similar period Pennsylvania's exports averaged £705,500 and biscuit flour alone made up half of this; in 1763 the exports of Virginia and Maryland amounted to £1,040,000, tobacco contributing £768,000, or three-fourths of the total, and Georgia's exports amounted to £74,000, about half of which represented rice. Products outside of New England were thus chiefly those of the soil. Just prior to the Revolutionary War the usual order was: tobacco, bread and flour, dried fish, rice, indigo, and wheat.

Early Imports.—In the early colonial period foodstuffs as well as manufactured goods were imported, but in time European crops were acclimated and native crops devel-

oped; hence a decreasing proportion of imports was composed of foodstuffs. Implements and tools as well as numerous manufactured articles were regularly purchased during the entire colonial period. New England's imports from the mother country regularly exceeded her exports and this so-called unfavorable trade balance was settled by bills of exchange on the West Indies. Virginia's main staple, prior to 1660, found its chief market in England and Holland and after that date in England, for tobacco was one of the enumerated articles which was required to be shipped to England, and so most of her imports came from those countries. Virginia, in contrast to New England, seemed to grow more rather than less dependent upon England, as time passed, and even imported a large part of her foodstuffs.

As early as 1721 the colonies imported nearly £300,000 worth of British manufactures. Woolen goods made up about half of this amount, and wrought iron and nails about an eighth, while silk, leather goods, linens and sailcloth, cordage, pewter, lead and shot, brass and wrought copper, and gunpowder followed in the order named. Importations of foreign goods amounted to about half as much, of which linen supplied about three-fifths; various prohibited East India goods together with calicoes, iron and hemp, and manufactured silk furnished most of the remainder. Omissions would perhaps run the total up to £500,000. By the outbreak of the Revolutionary War imports amounted to £2,500,000 or more.

Effect of Revolutionary War.—The non-intercourse agreements prior to the Revolutionary War and the war itself restricted the foreign trade of America, for at that time most of the commerce was carried on with Great Britain. Within three or four years after war broke out, however, large amounts of foreign goods found their way into America by privateering, and much indirect trade was carried on. The war, nevertheless, interrupted our trade with all countries, and destroyed it, so far as official records go, with Great Britain. The bad effects, furthermore, continued for some time. The average imports from Eng-

land were about a seventh less, 1784-1789, than they had been for the six years ending in 1774; the exports to England in the same period were little more than half of what they had been, 1769-1774. This large decrease in exports was due chiefly to the fact that Great Britain was obtaining her rice and tobacco elsewhere. The war, too, as already noted, reduced our tonnage, restricted its use in the trade with England, and closed the West Indies to our ships by the Treaty of Paris in 1783. At its close, consequently, we had many problems to face, for, in the words of Timothy Pitkin:

> When we became an independent nation, our commercial as well as our political situation was new, and we had many difficulties to encounter. During a contest of more than seven years, our commerce was annihilated, our shipping nearly destroyed, public credit impaired, a vast debt accumulated upon our hands, and the general government was illy calculated to repair those losses, and to bring into active operation the energies and resources of the nation. . . .[6]

Commercial Difficulties Under the Articles of Confederation.—Because one of the main difficulties in commerce and finance was governmental weakness we seem justified in emphasizing that weakness and in noting somewhat in detail the remedies. Naturally foreign nations saw little use in making treaties with Congress when that body could not enforce its will on the states, a condition recognized by Washington when he wrote: "We are one nation to-day and thirteen to-morrow, who will treat with us on those terms?" Besides pointing out the uselessness of a treaty with the United States, because of governmental weakness, Lord John Sheffield insisted that the Americans would buy four-fifths of their imports from Great Britain because of superior credit facilities, better and cheaper goods, and a more varied cargo. And he was correct. Imports from 1784 to 1789 were three times the exports. They were heaviest in 1784, due to the desires of the Americans, long deprived of English goods, and the efforts of the British

[6] *A Statistical View*, 25.

to regain the American market. But from 1785, with the exception of 1786, each succeeding year of the Confederation period showed an increase in exports over the preceding year. England was not the only country which refused to form a treaty with us. Under various pretexts France, Spain, and Portugal refused our overtures at treaties or additional treaties, restrictions on the West India trade being especially damaging.

But even in the general gloom threads of gold appeared. Reciprocity treaties, something like that of 1778 with France, gave us commercial privileges in the home ports of Holland in 1782, of Sweden in 1783, and of Prussia in 1785. The Dutch and Danish West India ports, moreover, remained open to us. Then, again, in 1785, the *Empress of China* reached Boston with a cargo from Canton and two years later the *Grand Turk* reached Salem with another cargo from the same ports. According to Macpherson there were fifteen American vessels at Canton in 1789, a larger number than that of any other nation except England. For a good many years, Pitkin says, we had been importing teas, silks, nankeens, and chinaware from the East. Exports were likewise increasing in this period, sales to Great Britain being a fourth more in 1788 than in 1784 with exports to other parts of the world increasing even more rapidly. And so the revival of prosperity was well under way when the Constitution was adopted, though as Washington had predicted to Lafayette in 1788 those blessings were attributed "to the fostering influence of the new government."

Conflicting tariff duties levied by the various states caused trouble. New York, for example, increased the duties on foreign goods in 1787 and applied the entrance and clearance fees to all vessels going to or from New Jersey and Connecticut which had been supplying New York City with firewood, garden vegetables, poultry, and dairy products. New Jersey retaliated by a tax of $1,800 a year on the New York lighthouse purchase on Sandy Hook; Connecticut took no official notice of the act, but her merchants agreed to suspend intercourse with New

York for a period of twelve months and imposed a fine of $250 on anyone who violated the agreement. Boundary disputes flared up with unexpected venom under the Confederation. Farmers of New York and Connecticut burned, robbed, and murdered, over disputed Vermont. Pennsylvania viewed with apparent approval the scalping of the New England "intruders" in the Wyoming Valley. Maryland and Virginia quarrelled over the navigation of the Potomac. About half of the states plunged into the folly of irredeemable paper money, and proud Massachusetts which refused was compelled to subdue an armed mob of 1,500 debtors led by Captain Daniel Shays, a mob strong enough to close the courts at Worcester and to attack the United States arsenal at Springfield.

Proposed Amendments.—Men early recognized the weakness and made proposals for increasing the power of Congress. Madison, in April, 1781, proposed compulsion for the collection of state assessments. Washington in 1783 and again in 1784 urged the need of a government with teeth. Congress itself recognized its impotence. In 1781 it asked for power to levy a duty of five per cent on most imports, but the stubbornness of Rhode Island blocked the way. Morris proposed a land tax, a poll tax, and an excise tax, from each of which $500,000 were expected, but this effort, too, failed. In 1783 the plan of a tariff was once more revived, Rhode Island's objections that the tax would bear most heavily on commercial states, would introduce officers not responsible to the state, and would run for an indefinite period of time being partially met. Thus the tariff was to run for twenty-five years, the revenue was to be used for paying interest on the public debt, and the money was to be collected by state officers. This time the obstinacy of New York defeated the amendment. In 1784 a special committee alarmed by the financial condition of the government and the adverse commercial regulations of England, France, and Spain, suggested that Congress be allowed for a period of fifteen years to regulate commerce with foreign countries, the hope apparently being that the threat of retaliation would force concessions. But three

states presented a stone-wall opposition. The next year Congress unsuccessfully proposed another amendment, granting it a limited control over both foreign and domestic commerce.

Dispute Over the Potomac.—But from an unexpected source came help. The dispute between Maryland and Virginia over the control of the Potomac led those states to send commissioners to Mount Vernon in 1785, as guests of Washington, to settle the matter. Because the discussion revealed that Pennsylvania and Delaware were likewise interested in the subject, the Virginia commissioners suggested that all the states be invited to send delegates to Annapolis the next year to discuss the commercial interests of the United States as a whole. Five states had representatives present and the New Jersey delegates had instructions to discuss not only the commercial question but other important matters. Alexander Hamilton, impressed by the New Jersey attitude, suggested that still another convention be held at Philadelphia the following year to consider the general revision of the Articles of Confederation.

The Constitutional Convention.—To the meeting at Carpenter's Hall, Philadelphia, in May, 1787, all the states except Rhode Island sent delegates. Practically every measure of the Constitution was the result of compromise, but the most important related to the nature of the government, representation, slavery, and commerce. The defenders of a strong government won. Equality of representation, demanded by the small states, was preserved in the Senate but representation in proportion to population was accorded in the House, which, as representative of the people, was to have the sole right to initiate revenue bills. The southern states insisted that slaves be counted in apportioning representatives, that the slave trade be unmolested, and that tariff laws require a two-thirds vote of the House. The final decision was to count five slaves as equivalent to three whites in apportioning representation and direct taxes, not to interfere with the slave trade for a period of twenty years, though a tax not to exceed ten

dollars a head might be levied, and to pass tariff laws by a simple majority vote, but with no duties on exports.

The Constitution was to go into effect when ratified by nine states. The Constitutional Convention, its work having been unanimously accepted by the states present September 17, for the opponents had gone home for the most part, submitted the document to Congress. That body sent the Constitution to the states for acceptance or rejection. Delaware led the way by a unanimous affirmative, December 7, 1787. Eight other states followed by June 21, 1788: Pennsylvania, New Jersey, Georgia, Connecticut, Massachusetts, Maryland, South Carolina, and New Hampshire. Virginia and New York soon ratified, but North Carolina did not until November, 1789, and Rhode Island held off until May 29, 1790. The latter was forced into the union by the Congressional threat to treat her as a foreign nation and to levy duties on her trade with other states. Although three of the states—Delaware, New Jersey, and Georgia—had ratified unanimously, the vote was exceptionally close and acrimonius in others. In Pennsylvania rioting, effigy burning, and throwing of brickbats and pamphlets marked the struggle won by the friends of the new government. A change of ten out of 355 votes would have defeated the Constitution in Massachusetts, of six out of 168 in Virginia, and of two out of fifty-seven in New York. The friends of the Constitution won because of superior ability and organization rather than because of greater numbers. Alexander Hamilton, James Madison, and John Jay in "The Federalist" with unanswerable logic explained the new document. And joy reigned supreme with its final ratification. Dinners, processions, illuminations followed rapidly. "Federal punch," "federal hats," "federal stays," and "federal tobacco mixtures" were widely advertised and used. One journal exulted: "The sloop *Anarchy* has gone ashore on the Union rock" and another said: "The old scow *Confederacy*, Imbecility master, had gone off to sea." Washington took the oath of office as president, April 30, 1789, and the new government was under way.

Because the powers of Congress are touched on slightly in other chapters or are more or less familiar to the general reader only those bearing especially on commerce will be quoted here. They are:

To regulate commerce with foreign nations, and among the several States and with Indian tribes—(Article I, Section VIII, 3).

No tax or duty shall be laid on articles exported from any State.

No preference shall be given by any regulation of commerce or revenue to the ports of one state over those of another; nor shall vessels bound to, or from, one state, be obliged to enter, clear, or pay duties in another—(Article I, Section IX, 5, 6).

No state shall, without the consent of the Congress, lay any imposts or duties on imports or exports, except what may be absolutely necessary, for executing its inspection laws; and the net produce of all duties and imposts, laid by any State on imports or exports, shall be for the use of the treasury of the United States; and all such laws shall be subject to the revision and control of Congress—(Article I, Section X, 2).

Trouble with France.—At this point it seems advisable to consider somewhat in detail our difficulties with foreign nations, 1790 to 1815, for those troubles, especially with France and England, had a bearing on our tonnage and foreign trade and so deserve more than the mere mention so far accorded. They, moreover, mark the winning of our commercial independence. Because our dispute with Spain is discussed elsewhere, it will be omitted here.

One of the main difficulties in the nineties was with France. When war broke out between that country and England, France demanded help under the treaties of 1778, which provided for trade reciprocity and active aid if French possessions in the West Indies were attacked by a foreign foe and the use of our ports for ships captured in war. But Washington, so advised by his cabinet, issued the famous Neutrality Proclamation, April 22, 1793, which declared that the United States intended to keep entirely aloof from European affairs. This position was well-nigh untenable, for Citizen Edmond Genet soon arrived at

Charleston, South Carolina, as minister of the French republic. He intended to use our ports in a naval warfare against the British West Indies and to instruct our government in its duties as an ally of France against England. His journey from Charleston to Philadelphia became a triumphal procession. But praise turned his head and his conduct became so offensive that Washington requested his recall.

Scarcely had this bitterness begun to abate before French disappointment blazed into furious indignation at the news of the Jay Treaty. To the French it appeared that a sister republic had allied with a monarchy to oppress the nation which had made possible American independence. James Monroe had unconsciously spread the oil for the conflagration when he had assured the French leaders that the United States would never make a treaty with England. But wrath needs control. Charles C. Pinckney, who was sent to France to replace Monroe as minister, was ordered out of the country. John Adams addressed a special session of Congress, May 16, 1797, and declared that conduct of that sort should be repelled in such a way as would "convince France and the world that we are not a degraded people humiliated under a colonial spirit of fear and sense of inferiority, fitted to be the miserable instruments of foreign influence, and regardless of national honor, character, and interest." Because Adams desired peace, he acted on Talleyrand's hint that an embassy would be received, and appointed John Marshall and Elbridge Gerry to join Pinckney. Talleyrand refused to treat directly with the embassy, but sent three private citizens to the American representatives. These agents demanded as a prerequisite to negotiations an apology by Adams for his message to Congress and the payment of $250,000 to the directors.

When the correspondence, known as the "X Y Z" dispatches, because the names of the agents were omitted, became public, war spirit kindled. Adams sent another strong message to Congress, June 21, 1798. "Millions for defense, but not one cent for tribute," and the new songs,

"Hail, Columbia" and "Adams and Liberty," resounded over the land. Congress voted to complete the six frigates ordered in 1794 and, also, twelve other men-of-war. Commissions were issued to captains of several hundred privateers and eighty thousand militia were made ready with Hamilton and Knox as major-generals and Washington as commander-in-chief. Although war was not actually declared, several skirmishes took place at sea. In 1799 Commodore Truxtun of the *Constellation* seized a French frigate and defeated another in battle. When Talleyrand saw that the United States would fight, he disclaimed responsibility for the acts of his agents and pledged France to receive any minister whom we might name. Apparently without consulting his cabinet, Adams, under severe criticism, sent an ambassador to France and made peace in February, 1801. About fourteen years later, January, 1815, he warmly defended his act: "I desire no other inscription over my grave stone than 'Here lies John Adams, who took upon himself the responsibility of Peace with France in the year 1800.' "[7]

Trouble with England.—But of longer duration and of greater import than the difficulty with France was our dispute with England. After the conclusion of peace in 1783 England retained her fortified posts on the shores of the Great Lakes in order to hold her valuable fur trade, then worth $1,500,000 annually. The excuse advanced was that our government had not compelled the merchants to pay debts contracted in England. We complained that the British had carried off some of our slaves at the close of the war, had closed the West India ports to our trade, had refused to send us a minister, had stopped our ships to search for British deserters, and had actually impressed many American citizens. War sentiment was strong throughout the country, but Washington, desirous of peace, sent John Jay to England to negotiate a treaty. That document, agreed upon in 1794, was a bitter disappointment. England did agree to evacuate the fur posts by

[7] Adams, C. F. *The Works of John Adams* [Little, Brown and Company, Boston, 1856] Vol. X, 113.

June 1, 1796, and to arbitrate disputed boundaries, injuries to American shipping, and the debts due by Americans to British merchants, but she refused to pay for the stolen slaves, made such minor concessions in the West India trade that the Senate cast out the clause, and made no mention of impressment.

The impressment of seamen, against which we had complained, continued. Although it is true that hundreds of British sailors had deserted the navy and had taken service under our flag, it is equally true that no independent nation can submit to the search and seizure of its vessels and retain any self-respect. And Great Britain had no regard for our rights. When Jefferson sent William Pinkney to London to coöperate with James Monroe in making a treaty to replace the Jay Treaty, which expired in 1806, the result was so insulting that the president refused to send the treaty to the Senate for ratification. Throughout this period English cruisers skirted our coasts, stopped our vessels, and impressed our sailors. On June 22, 1807, the *Leopard* opened fire upon the *Chesapeake* near the Virginia coast because she refused to stop to be searched for deserters. The *Chesapeake,* unprepared for action, finally fired one gun and then surrendered, but not until three men had been killed and eighteen wounded.

Orders and Decrees.—In the meantime, both France and England were seizing our vessels and cargoes. From May 9, 1793, through April 17, 1808, France issued eighteen decrees affecting the United States; from March 25, 1793, through October 14, 1808, England issued at least thirty acts or orders affecting the United States. Those of England were the most damaging to our commerce. To the reëxport trade, or the shipping of French West India products to the United States and then on to France, England seems to have objected little prior to 1800, though her Orders in Council began as early as 1789. With the outbreak of the war again in 1803, following the temporary peace of Amiens, she changed her policy radically. In the cases of the *Immanuel* and the *Polly,* Sir William Scott had laid down the general principle that in spite of the

Rule of 1756, which denied to a nation in time of war a commerce prohibited to it in time of peace, goods could be carried between the colony and the mother country provided the voyage was broken by landing the goods in the United States and passing them through the customs houses. In the case of the *Essex,* July, 1805, though the vessel was proper prize on other grounds, Scott held that the intention of the shipper should be taken into consideration. If the intention was to carry the goods from the colony to the mother country or from the latter to the former, landing the goods in a neutral port, satisfying custom house formalities, or even thoroughly repairing the vessel made no difference. Thus, according to Scott, if the Americans intended to carry on trade denied in time of peace, the cargo was good prize. Such a decision, persisted in, spelled ruin for American commerce.

The warring nations probably had no particular intention of directly injuring the United States, but in their anxiety to crush each other, they did much harm to the greatest neutral. In 1806, Great Britain by an "Order in Council" declared Europe from Brest to the mouth of the Elbe blockaded, and Napoleon, temporarily supreme on land by the defeat of the Austrians at Austerlitz in 1805 and of the Prussians at Jena in 1806, answered by the Berlin Decree which declared a blockade of the British Isles. England's Orders in Council of 1807 prohibited Americans or other neutrals from carrying any products to France or her allies unless they underwent search by English authorities for contraband of war or entered English ports and paid duties on their cargoes. Napoleon answered England the same year by the Milan Decree, which forbade all trade with Great Britain and her possessions and authorized seizure of any vessels submitting to English search or paying English duties. Because the French navy had been crippled at the battle of the Nile in 1798 and virtually annihilated at Trafalgar in 1805 the threat was not so great from France as from England, but even at that France captured 206 vessels prior to the Berlin and Milan decrees, 307 during their existence or

up to August 5, 1810, and 45 thereafter. England captured 528 vessels prior to the Orders in Council of November 11, 1807, and 389 subsequent thereto. All of these captures were made prior to July 6, 1812. Before the embargo English and other privateers captured about 1,600 American vessels and property valued at $60,000,000.

The Embargo.—In order to defend our commerce, bring about the repeal of the obnoxious orders and decrees, and force respect for our flags, various expedients were proposed, among them the embargo, which was adopted and put into effect December 22, 1807. By this measure, the sailing of all ships and vessels subject to the United States, if destined to some foreign port or place, was forbidden and in the coastwise trade bond, with at least one surety to double the value of vessel and cargo, was required that the goods would be landed in the United States. Four acts still more stringent were passed within the next thirteen months.

The disastrous effect of the embargo on our commerce and shipping cannot be indicated entirely by cold statistics, for the customs year ended September 30 and so no one year showed the entire effect of the embargo, which, of course, stopped all lawful exportation for over fourteen months. But exports declined from $108,343,150 in 1807 to $22,430,960 in 1808, and imports from about $138,500,000 to $57,000,000, and tonnage constructed from about 99,784 to 31,755. According to some authorities three-fourths of our sailors were thrown out of work, wharves were deserted, streets grass-covered, ships rotting, poverty and crime rampant. Smuggling thrived on our northern and southern borders and at sea. Open talk of secession and civil war, accompanied by armed resistance, led Jefferson to surrender his pet measure.

Other Legislation.—On March 1, 1809, therefore, the embargo act was repealed and a non-intercourse act was substituted. Because the latter measure opened commerce with all countries except England and France, commerce received new life. Merchants in violation of the law sent their goods to France and England either directly or in-

directly. When Erskine announced that England would withdraw the Orders in Council, Madison, whose diplomatic judgment was at fault, hurriedly reopened commerce with that power. England, however, disavowed Erskine's promise and recalled its author. Madison next tried to bribe England and France to bid against each other for our trade, and Congress, by "Macon Bill No. 2," passed May 1, 1810, repealed the non-intercourse act and provided that if either France or England revoked the objectionable orders and the other did not within three months, non-intercourse would be revived with the nation refusing. Napoleon, grasping a golden opportunity, declared that after November 1 the Berlin and Milan decrees would not be enforced against the United States if that power would compel Great Britain to respect her rights. Oblivious of the provisional nature of Napoleon's offer and of the emperor's dubious character, Madison issued a proclamation on November 2 to the effect that the Berlin and Milan decrees had been revoked. The next month Napoleon confiscated about ten million dollars' worth of American property on the pretext that the United States had not obtained the repeal of the British Orders in Council. In the meantime, Madison, yet ignorant of Napoleon's action, issued a proclamation reviving non-intercourse with Great Britain if she did not repeal her orders prior to February 2, 1811. And Congress, no word having come from England, again prohibited trade with England and her possessions.

War of 1812.—In May, the *President,* in chasing a British cruiser which had impressed a Massachusetts citizen, was fired on by the *Little Belt,* but the American vessel forced the British vessel to strike its colors. In November of the same year, William Henry Harrison defeated the Indians at Tippecanoe Creek and wrote that they were well supplied with the best British powder. Under the influence of Henry Clay, John C. Calhoun, Langdon Cheeves, and William Lowndes, sentiment rapidly approached war. Madison's message of June 1, 1812, retold the British acts in stopping our ships, in taking our seamen, in encouraging the Indians to attack us, in blockading our ports, and in

refusing to take back the Orders in Council, and on June 18, Congress by a vote of almost two to one declared war on England. But the need for war had passed. Napoleon's armies were practically destroyed in the Russian campaign. As Napoleon's power grew less, England grew more willing to promote friendly relations. She offered to give reparation for the "*Leopard-Chesapeake* affair" and two days before the United States declared war agreed to withdraw the Orders in Council.

But the war was on, for no means of rapid communication then existed. The United States was poorly prepared with less than seven thousand soldiers and a navy of fifteen vessels in comparison with England's one thousand. The facts of this brief war are well known. In spite of spectacular naval victories, we suffered more than did England. By the end of 1813 about 250 idle vessels were lying in the docks of Boston alone. Imports fell to less than $13,000,000 in 1814 and exports to less than $7,000,000, though both had shown a marked revival after the repeal of the embargo. Tonnage constructed in 1814 amounted to little more than 29,000, or about one-fifth that of 1811 and 1815. In the six years, 1809-1814, our exports of foreign origin, in contrast to an earlier period when it was half, amounted to only $76,699,757 out of a total of $253,588,760, and only about a sixth belonged to the last three years, although about a fourth of the total commerce came in that period. In no year after 1808 did the exports of foreign origin exceed the exports of domestic origin. And our total commerce remained virtually stationary from 1815 to 1835, save for the abnormal imports of 1816 occasioned by the British efforts to recapture our markets. Not until 1835 did our exports pass the high mark set in 1807.

Exports.—For the last hundred years or so exports have been classified under six main heads. In the first group, crude materials for use in manufacturing, the proportion was six-tenths of all exports in 1821 and occasionally better than two-thirds until the Civil War. With numerous fluctuations the tendency has been downward and now stands at about one-fourth. Foodstuffs in crude condition and

animal foods were less than a twentieth in every census year up to 1870, but with crop failures in Europe and

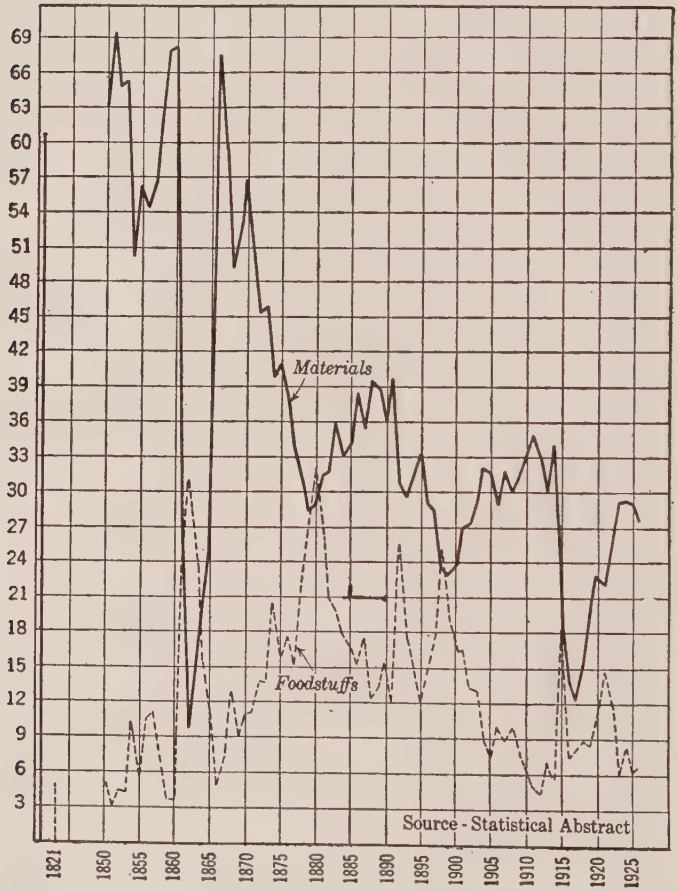

CHART NO. 56. EXPORTS OF CRUDE FOODSTUFFS AND MATERIALS. PERCENTAGE OF TOTAL.

bumper crops here they rose to nearly a third of the total in 1880. With numerous fluctuations the tendency has been downward. The third group, foodstuffs partially or wholly manufactured, has varied also. It was about a fifth of the

total in 1821 and at no time has doubled that proportion, the nearest approach being 1862-1864. Manufactures for

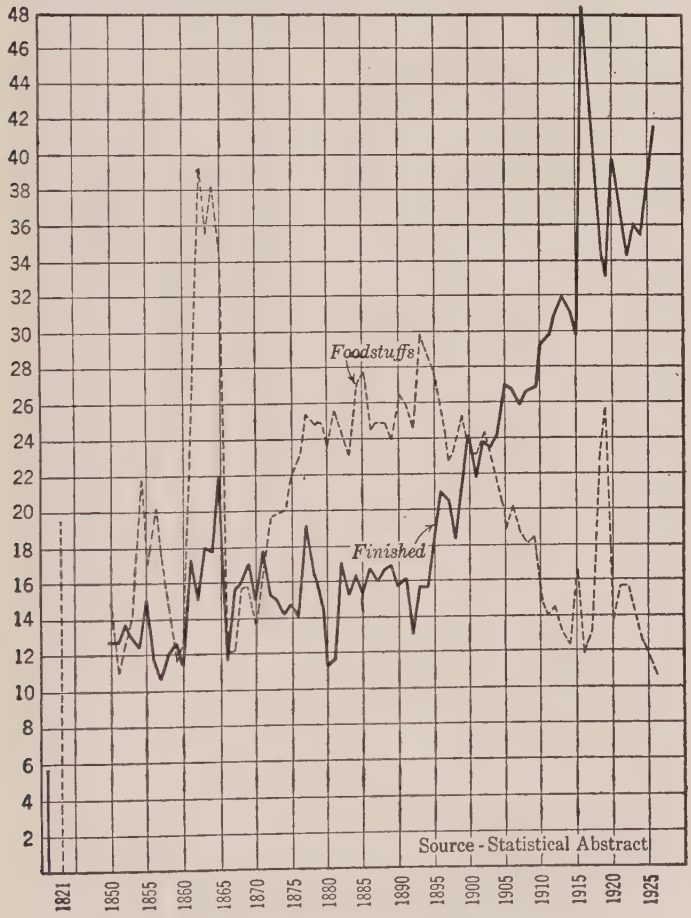

CHART No. 57. EXPORTS OF MANUFACTURED FOODSTUFFS AND FINISHED MANUFACTURES. PERCENTAGE OF TOTAL.

further use in manufacturing did not equal a tenth of the total, at least consistently until 1900, and little more than doubled that proportion in only one year, 1917. Manufac-

tures ready for consumption, the fifth group, contributed only a seventeenth of the total in 1821, but the tendency, with occasional fluctuations, has since been upward, the

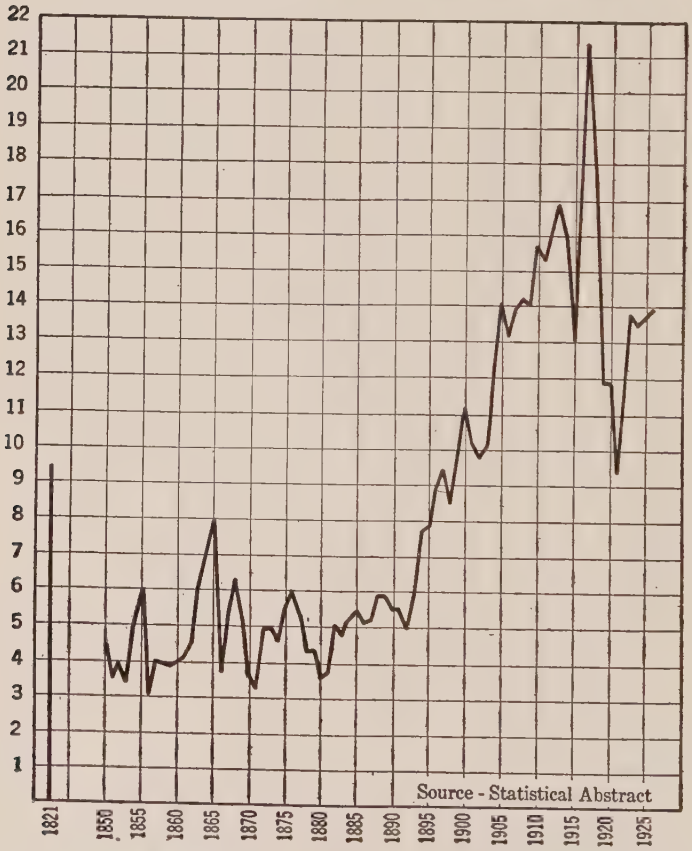

CHART NO. 58. EXPORTS OF SEMI-MANUFACTURES, PERCENTAGE OF TOTAL.

unusual proportion of almost half being set in 1916 with approximately a third now common. Miscellaneous exports, seldom as much as one per cent of the total, have made up the remaining exports.

One of the most significant things in our export trade is the declining importance of agricultural exports and the growing importance of finished manufactures. From 1852 to 1868 agricultural exports made up over four-fifths of all domestic exports but now the proportion is little more than two-fifths. The principal food exports are wheat, corn, and pork products. Competing with us in the European markets are Canada, Argentina, Australia, and before the war, Russia. Normally the United States exports about one-fourth of her wheat crop, but feeds seven-eighths of her corn to domestic live stock. The part exported goes out usually in the form of lard and other pork products. Cotton, an agricultural product used as a raw material in manufactures, made up from one-half to two-thirds of our total export values 1830-1860, but the proportion is much less now, normally a fifth to a fourth of the total. Egypt, China, and India are our leading competitors. We export some mineral products, but not more than five per cent of coal and iron enter into the foreign trade, traffic in such materials being most important in western Europe. But the exports of petroleum and copper are important, for the United States has about as large a proportion of the world's production for them as for cotton. Our comparative advantage in manufactures is due primarily to rich natural resources and the superior use of machinery. Canned foods, cotton cloth and wheat flour are products manufactured from farm raw materials by machinery, and machinery and automobiles represent machine-made manufactures of our iron ore. Consumers' goods entering into our exports are chiefly cheapened luxuries. Silk goods, automobiles, plumbing equipment, millinery, boots and shoes, musical instruments, and household electrical appliances are examples of semi-luxuries brought within the grasp of the average consumer by our standardized production. Then, too, we made machines to produce goods such as agricultural machinery, textile machinery, metal-working machinery and tools, and office equipment such as adding machines, cash registers, and typewriters.

The market for our products is exceptionally important.

Sometimes over four-fifths of the cotton is exported, two-thirds of the rosin and copper, and over half of the motor cycles. Even in the case of wheat, a fourth of which is normally exported, a decline in foreign demand would cause trouble, for the price of the surplus sold in foreign markets regulates the price in the home markets. Professor Lionel D. Edie pictures the effects thus:

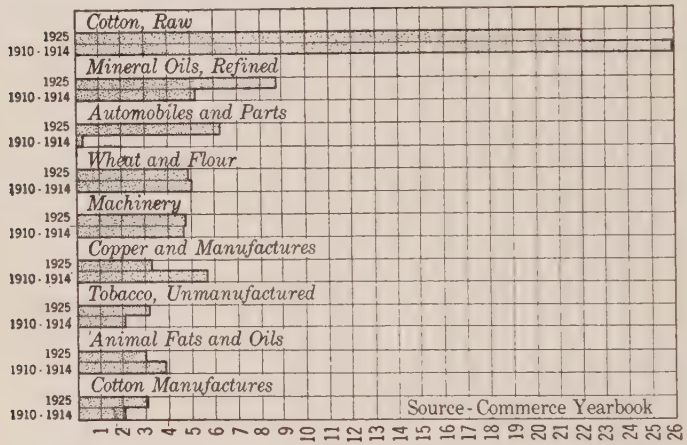

Chart No. 59. Leading Domestic Exports. Percentages of Total Value.

. . . A decline in foreign demand of 5 or 10 per cent may cut the price of wheat by 25 per cent, or more, and drive the price below the cost of production to the wheat farmer. An agricultural depression ensues, and the purchasing power of farmers for all kinds of manufactured goods sharply declines. Fewer automobiles, fewer agricultural implements, fewer articles of clothing and of comfort are bought. The manufacturing industries in these lines suffer a severe falling off in the home market. In turn, the iron and steel, lumber and rubber industries which supply raw materials suffer a slack in domestic demand. The trouble spreads throughout the whole business structure, although its starting point was a mild decline in foreign demand for a single product. . . .[8]

[8] *Economics: Principles and Problems* [Thomas Y. Crowell Company, New York, 1926] 677, 678.

Imports.—In imports, as well as in exports, six main groups are recognized. As a corollary to our increasing export of manufactured goods we would expect to find, and

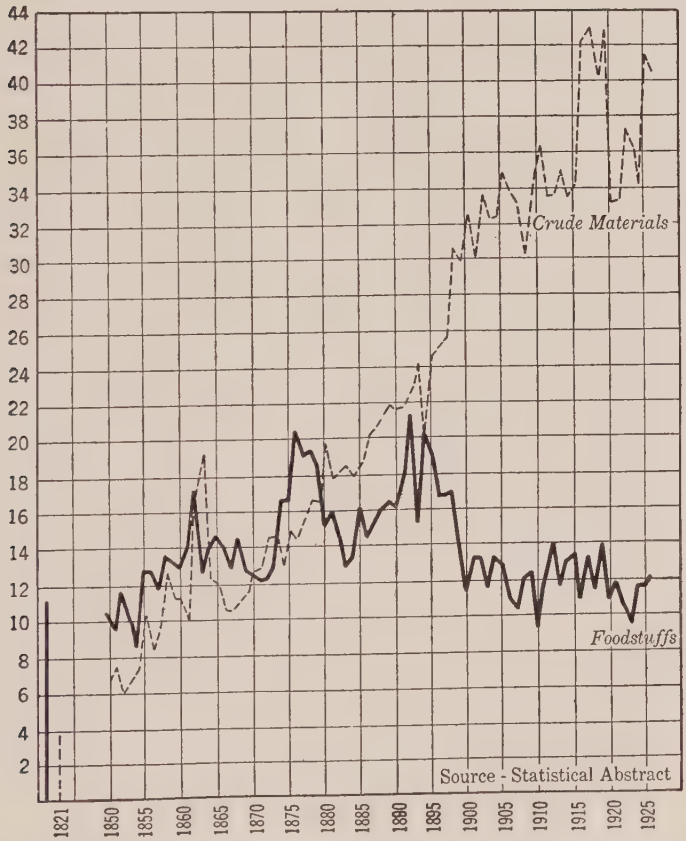

Chart No. 60. Imports of Crude Foodstuffs and Crude Materials. Percentage of Total Imports.

we do find, an increase in importation of crude materials for use in manufacturing. From less than one-twenty-fifth of the total in 1821, the proportion advanced to more than a fourth in 1896 and since 1902 has usually been over a

third. Foodstuffs in crude condition and food animals have varied little since 1821 when they stood at a ninth of the total; the high point had been set in 1892 at little more

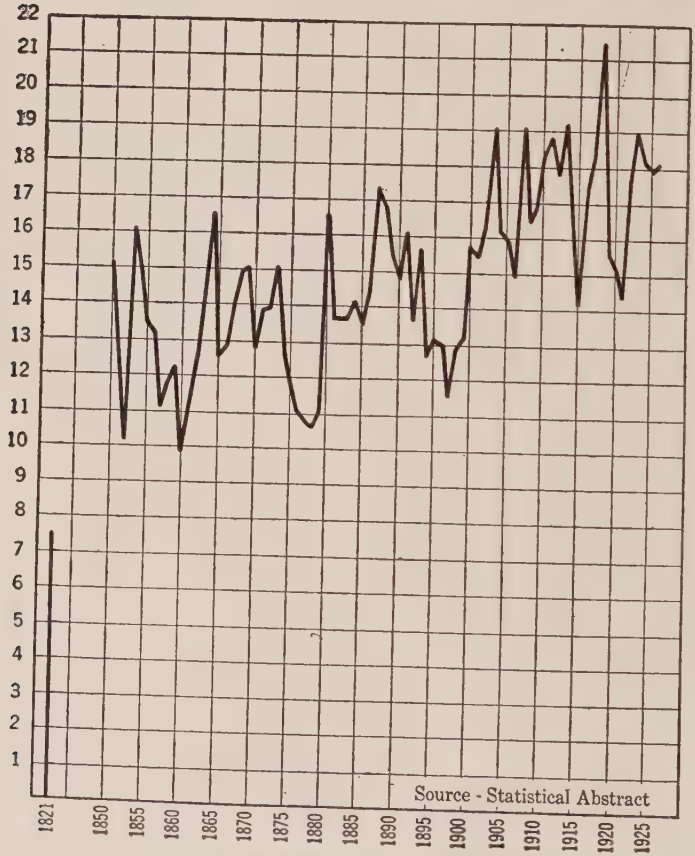

CHART NO. 61. IMPORTS OF SEMI-MANUFACTURES. PERCENTAGE OF TOTAL.

than a fifth of the total. The third group, foodstuffs partly or wholly manufactured, has shown a slight tendency to decrease, the proportion being about one-fifth in 1821 and now about one-seventh. This decrease, with occasional re-

coveries, became marked after 1879. Manufactures for further use in manufacturing constituted about a thirteenth of the total in 1821 and a seventh in 1850, the usual proportion now being about a fifth or a sixth. The fifth group,

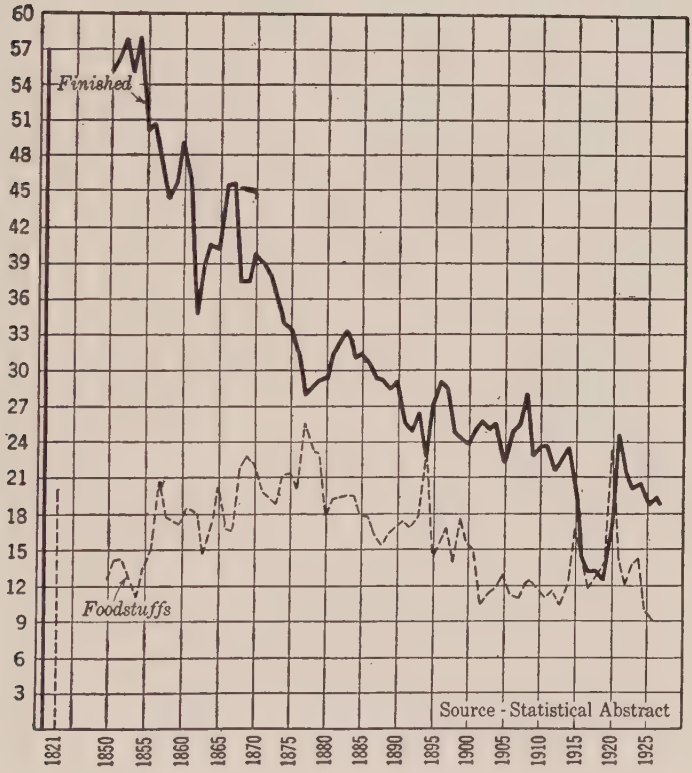

CHART NO. 62. IMPORTS OF MANUFACTURED FOODSTUFFS AND FINISHED MANUFACTURES. PERCENTAGE OF TOTAL.

manufactures ready for consumption, generally constituted over half of the total prior to 1855, but is now seldom more than a fourth or a fifth. Since 1890 on only one or two occasions have miscellaneous imports passed more than one per cent of the total.

For a good many years our chief imports have been foodstuffs and unmanufactured goods. From 1852 to 1868 the average was less than three-tenths for agricultural imports, but in recent years it has been nearly half. This increase has been largely due to the demand for tropical foodstuffs and raw materials occasioned by our rising standard of

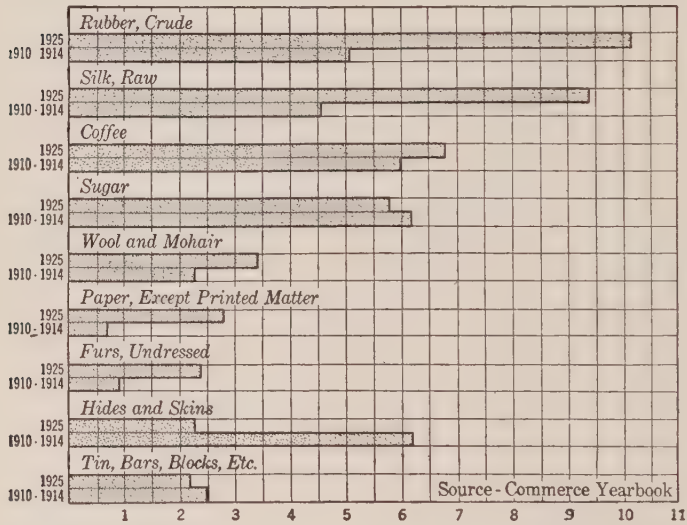

Chart No. 63. Leading Imports. Percentage of Total Value.

living. Sugar, consumed to the extent of more than a hundred pounds per year per person, is drawn from Cuba, Porto Rico, and Hawaii. Coffee, the second important food import, comes chiefly from Brazil. Tea is imported largely from China and Japan, but is less important relatively because we consume ten pounds of coffee to one of tea. Among other tropical food imports are fruits, spices, cocoa, nuts, oils, and drugs. Some cotton is imported because of the special grades supplied, about half of the wool used in our woolen manufactures, and an even larger proportion of raw silk. Special grades of tobacco leaf, vegetable oils, hides and skins, paper and wood pulp, and crude rubber

are numbered among our important imports. We also import some coal, iron, petroleum, copper, and tin, and

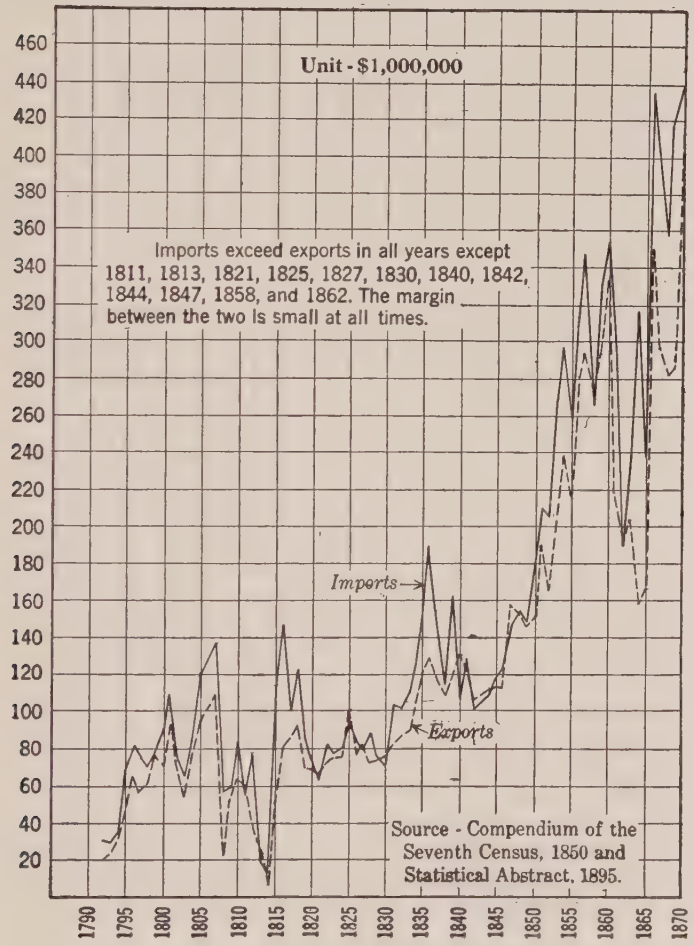

CHART NO. 64. COMMERCE, 1790-1870.

artistic and quality manufactures of one kind or another.

Balance of Trade.—Visible exports and imports, of course, never strike an exact balance, either as a whole or

for individual countries. From 1710 to about 1740 England imported more from the colonies every decade than she exported to them, but in the decades after 1740 her exports to the colonies exceeded her imports from them. According to Lord Sheffield's tables the value of exports from Great Britain to the colonies, 1700 to 1773, exceeded the value of her imports from them by more than

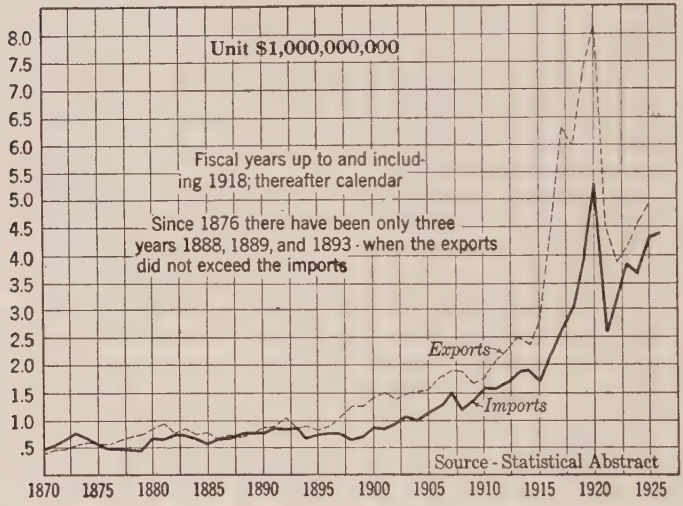

CHART NO. 65. COMMERCE, 1870-1925.

£20,000,000, but the excess of imports in Georgia and the colonies north of Maryland for the same period was nearly £31,000,000. Virginia, Maryland, and North and South Carolina, however, had a surplus in exports of over £10,750,000, though this was probably balanced by the importation of slaves. With some exceptions, after the Revolutionary War, notably in the twenties and 1862 and 1874, imports exceeded exports in value until 1875, since when, with few exceptions, 1888, 1889, 1893, exports have exceeded imports. With Europe alone our exports exceeded our imports by more than $20,000,000,000, 1914-1920; with North America we also had a large favorable balance ac-

counted for by Canada alone. With Oceania our balance is usually favorable; with Africa it was unfavorable about half the time, 1913-1920; and with South America and Asia it was unfavorable all the time.

Value of Commerce.—The value of commerce has, with some fluctuations, steadily advanced since the colonial days, though not until about 1840 did the value of our exports and imports run regularly ahead of the high marks set in 1807 at about $108,000,000 and $137,000,000 respectively. Embargo and war caused disastrous effects, though through the desire of the British to regain American markets, imports jumped to about $147,000,000 temporarily in 1816. At the outbreak of the Civil War the combined total was about $700,000,000. Exports first reached $1,000,000,000 in 1896 and imports in 1903. The high point in total commerce was set in 1920 at about $13,500,000,000, with exports worth $8,228,016,307 and imports worth $5,278,481,490. A large part of these amounts, perhaps half, represented inflation, though there had been a heavy demand in Europe for foodstuffs, clothing, munitions of war, etc.

Chief Ports.—In the export trade prior to the Civil War the South was far ahead of the North. In 1860, for instance, the exports of New Orleans were greater than the combined exports of New York, Boston, Baltimore, and Philadelphia. Concerning the glories of the lower Mississippi, J. S. Buckingham, an English traveller, declared in part:

> It may be doubted whether any river in the world can exhibit so magnificent a spectacle as the Mississippi in this respect. There are more ships in the Thames, but the largest and finest of these are usually in the various docks, while the smaller kind are chiefly seen without, and the Thames has not half the ample breadth and sweep of the Mississippi. There are as many vessels, perhaps, in the Mersey, but these are nearly all in dock, and the river is comparatively bare. The Tagus is a broader stream, but its shipping are neither so numerous nor so fine; and even New York, splendid as is the array of ships presented by her wharfs, is not so striking as New Orleans, where a greater number of large, handsome, and fine vessels seemed to me to

line the magnificent curve of the Mississippi, than I had ever before seen in any one port. . . .[3]

The glories of New Orleans, however, have in a measure departed. Now the chief southern port is not New Orleans, Galveston, or Mobile, but Port Arthur, probably the most rapidly growing export center of the United States. From a third to a half of our exports at the present time leave the country through New York.

Changes have likewise occurred in our import trade. In 1760, for instance, Virginia's imports amounted to about £850,000 and South Carolina's to £555,000, but by 1855 the imports of Virginia amounted to only $1,250,000 and of South Carolina to $1,750,000. Gains went to New York, Boston, and other northern ports. In 1821 a little less than two-fifths of all the imports of the country came through New York, ten years later over half, and in 1855 more than two-thirds. In the fifties Boston handled a sixth or a seventh of the total imports. Since then New York's proportion of all imports has declined, but still more than half of all our imports come through its harbor.

Since 1900 the proportion of trade handled by the eastern seaboard has declined from about three-fourths to less than two-thirds. In total commerce in 1913, according to Professor Clive Day, the following ports ranked next to New York: Galveston with approximately seven per cent, New Orleans with six, Boston with five, Philadelphia with four, and Baltimore, San Francisco, and Puget Sound with three each. The Gulf and Northern Border districts have gained most markedly in the export trade in the last quarter of a century and also in the import trade, though it is not likely that any southern port will rival the New Orleans of 1860 in relative importance. In 1925 the Atlantic District handled about two-fifths of the cargo tons exported and three-fifths of the amount imported; the Gulf District one-fourth and one-fifth; the Pacific District one-sixth and one-sixteenth; and the Great Lakes District one-seventh and one-seventh.

[3] See *The Slave States of America* [London, 1842] Vol. I, 325-327.

Countries in Trade.—In colonial days by the Navigation Act of 1660 and others, England required the colonies to export to her alone products which she could not produce or supply in amounts sufficient to satisfy her own needs. These products were known as the enumerated articles and tobacco was by far the most important. Other products such as fish, the grains, foodstuffs, etc., found their markets chiefly in the West Indies or Europe, for their free admission into England would have injured English producers. In 1663 the mother country required the colonists to buy from or through her. After independence had been won, trade persisted with England, for the English merchants gave the best bargains and best credit facilities, and long established custom was not without its influence.

A very important branch of the colonial trade was with the West Indies, which purchased in 1770 colonial products to the amount of £844,178, chiefly fish, Indian corn, wheat and flour, lumber, and animals. Colonial imports from the West Indies amounted to about £949,656 in the same year. Over half of the import value was rum from the British West Indies, about a fifth molasses, of which only seven per cent came from the British West Indies, and over a sixth sugar, of which more than two-thirds came from the British possessions. British interference with this trade through taxes on foreign West India products by the Molasses Act of 1733 and the Sugar Act of 1764 formed a cause of the Revolutionary War. Next in commercial importance was South Europe and of minor importance was Africa. To the former we exported products that England did not want, importing little, and to the latter chiefly rum, candles, rice, and sugar in exchange for slaves.

Naturally in the nearly a century and a half since the winning of independence, numerous variations have occurred in our trade, but Europe has always dominated and England has led, except when we were at war with her. In 1800 nearly three-fifths of our exports went to Europe, eighty years later almost seven-eighths, but now little more than one-half. Imports from Europe until the outbreak of the World War constituted one-half of the total, passing

the seven-tenths mark in 1854 and 1855, but in 1918 fell to little more than a tenth and now stand at approximately one-third. The increase of manufacturing in the United States and the elimination of Europe's services as a re-

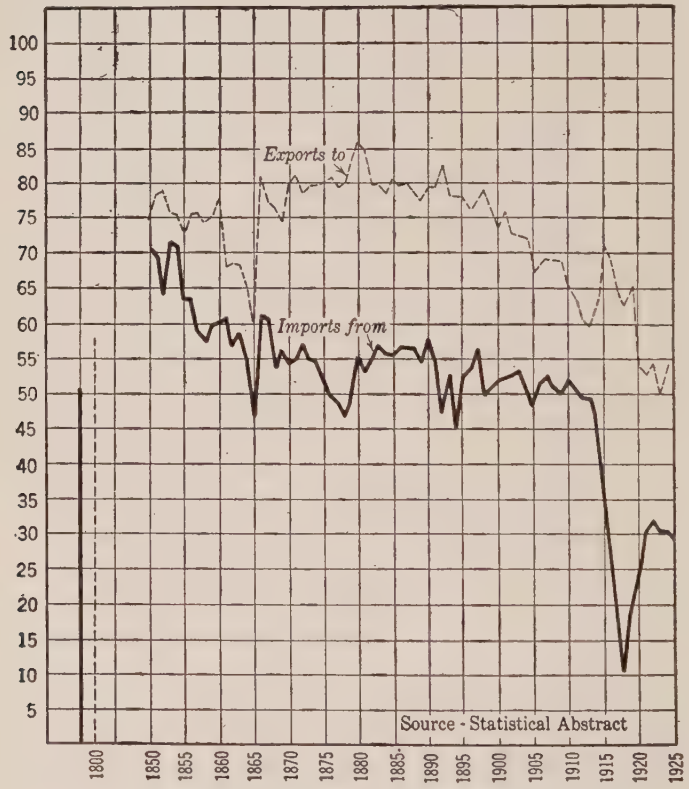

CHART NO. 66. TRADE WITH EUROPE. PERCENTAGE OF THE TOTAL.

exporter of tropical goods are two causes explaining in part this decline.

At the beginning of the nineteenth century about two-fifths of our exports went to other parts of North America; in 1860 an eighth; and now about one-fourth. In 1800 a little more than one-third of our imports came from North

America, in the eighties about one-fifth, in 1897 about one-seventh, but more recently from a fourth to a third.

In 1810 less than a fortieth of our exports went to South

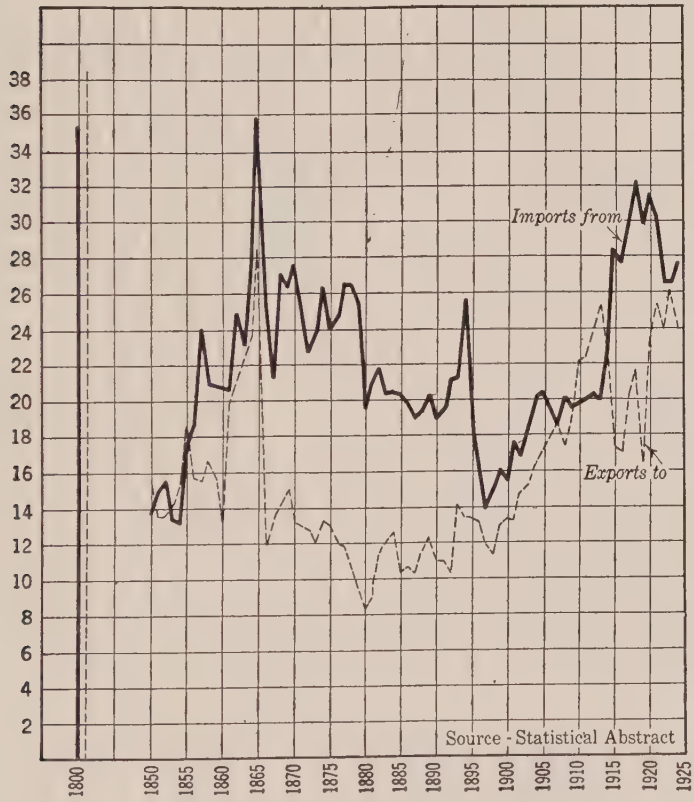

Chart No. 67. Trade with North America. Percentage of the Whole.

America and our proportion has approximated a thirteenth only a few times, the increase being largely due to Europe's inability to supply the demand. But even though until lately we have proved unwilling to cater to the demands of South America, we have purchased heavily from that region. By 1860 South America supplied nearly a tenth

of our imports and in 1917 and 1918 over a fifth, though a seventh or an eighth is nearer the usual proportion.

Exports to Asia in 1800 constituted less than a fiftieth

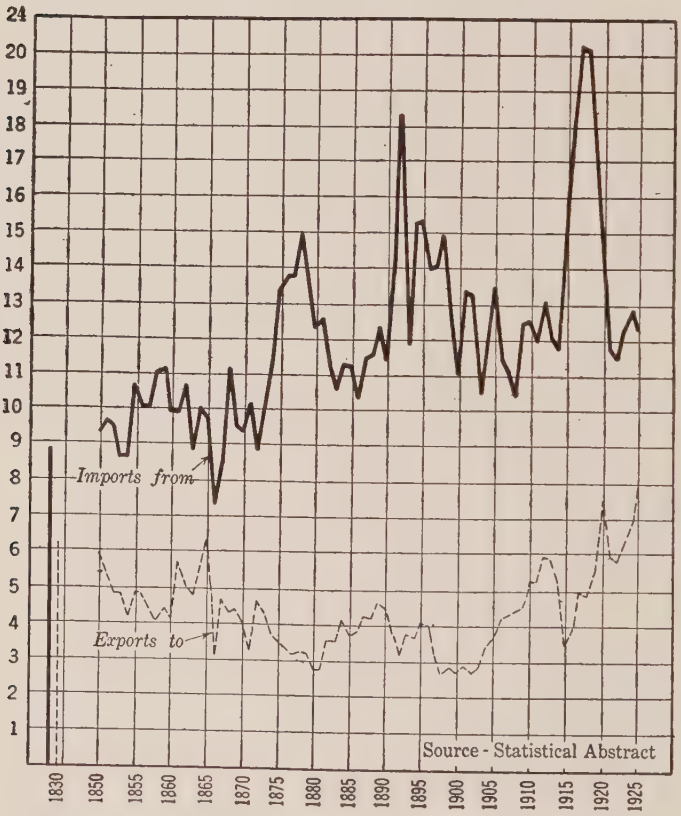

CHART NO. 68. TRADE WITH SOUTH AMERICA. PERCENTAGE OF TOTAL.

of our total, in 1860 little more, in 1913 about a twentieth, and ten years later, the high point, approximately one-eighth. But a far higher proportion of our imports, as in the case of South America, came from that region. This was an eighth in 1800, a sixth a century later, and, due to

the World War, well over a fourth since 1917, save that 1921, due partly to the curtailment of such luxuries as silk, because of depression, saw a slight fall below that proportion.

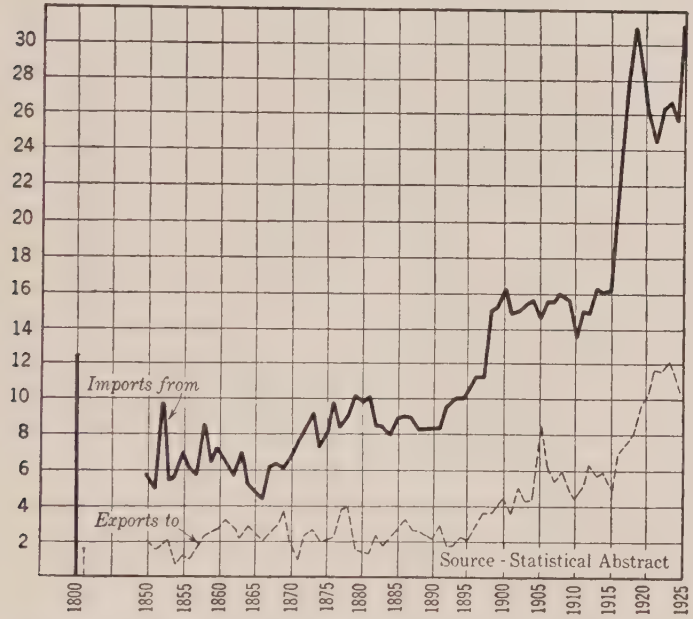

CHART NO. 69. TRADE WITH ASIA. PERCENTAGE OF THE TOTAL.

Trade with the other two grand divisions is relatively much less important. Exports to Oceania made up one-fiftieth of one per cent of the total in 1800, and have seldom passed a thirtieth of all exports. Imports from Oceania in 1800 reached about one-sixth of one per cent of the total, and in 1918, the high point, approximated a twentieth of the total. Exports to and imports from Africa were much more important in the early part of the period than those of Oceania, but less important in the closing part. Exports in 1800 constituted 1.56 per cent of the total, less than one per cent in 1860, and 1.8 in 1925. Imports contributed

three-fifths of one per cent of our total in 1800, but 2.2 in 1925.

In Africa, Oceania, Asia, North America, and South America we are normally buyers, a tendency furthered by the World War, rather than sellers. From those regions we receive raw materials and tropical products of various kinds. Because of an unproductive labor supply, due partly to tropical climate and cultural backwardness, Africa's commercial progress is retarded. South America lacks a good labor supply, at least in the tropical part, and the balance produces products with which we are supplied. And the same statement will hold true of Oceania, an English possession, which will continue to buy largely from the mother country. With Asia and North America our trade has shown a rapid increase, for there we find tropical and other products, chiefly raw materials, needed for food or manufacturing purposes. Those regions, also, are rich potential markets for our manufactured goods and time will doubtless reveal a closer balance of exports with imports. The labor supply, moreover, is of a type more amenable to advanced production methods. For three-quarters of a century and more, the proportion of our exports to Europe has exceeded the proportion of our imports from there, the latter being reduced by the World War and its aftermath, and the excess has been sufficient to overcome with three exceptions since 1875, namely, 1888, 1889, and 1893, the common unfavorable balance with the other grand divisions, conclusive proof of Europe's importance in our trade.

In 1924 the countries ranked as follows in our exports: United Kingdom, Canada, Germany, France, Japan and Chosen, Cuba, and Italy. The first four leaders showed a lower proportion in 1924 than they had revealed 1910-1914; Japan, on the other hand, rose from eleventh place to fifth. In 1924 our import percentages were distributed in the following order: Canada, United Kingdom, Cuba, Japan and Chosen, British East Indies, Brazil, Mexico, and France. Prior to the war the United Kingdom ranked first, furnishing one-sixth of the imports. Germany sup-

plied over one-tenth before the war but only four per cent in 1924 and France fell from third place to eighth. Japan virtually doubled her proportion, rising from eighth place to fourth, and the British East Indies moved up from

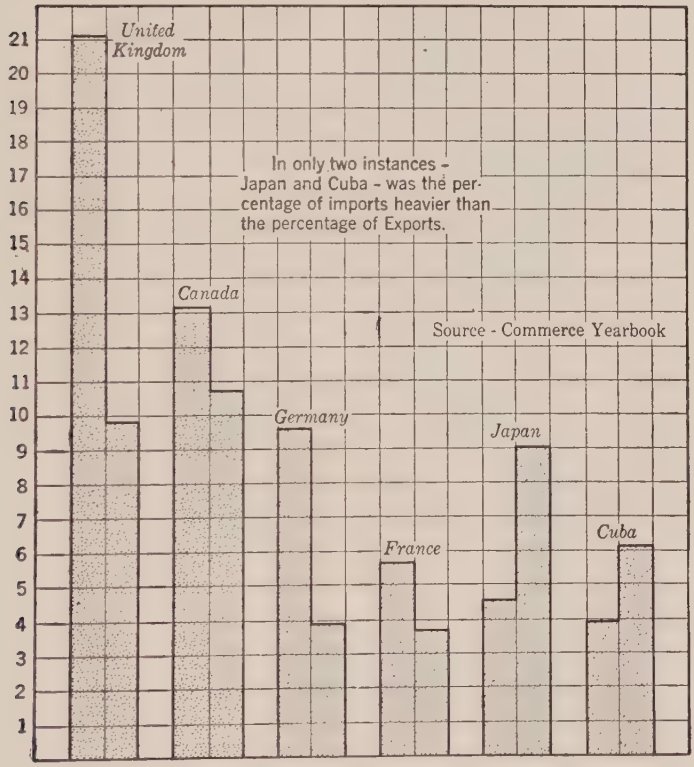

CHART NO. 70. LEADING COUNTRIES IN OUR FOREIGN TRADE. PERCENTAGE OF TOTAL.

seventh to fifth place. Little changes were made in exports in 1925 except the passing of Cuba by Italy, but numerous changes occurred in imports, the ranking for the first ten being: Canada, United Kingdom, Japan, Straits Settlements, Cuba, Brazil, British India and Ceylon, Mexico,

China, and Germany. The most important nations in our 1925 foreign trade appear in Chart 70.

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CHAPTER XIV

FISHING AND TRAPPING

Colonial Fisheries.—In this chapter we shall discuss somewhat in detail fishing and to a much lesser extent trapping, both of which were relatively more important in our early history than they are at the present time.

From the beginning, New England has held an important place in our fisheries, for the soil was rather poor for agriculture, trees were near the coast, and the water literally swarmed with fish. Early voyagers with permissible exaggeration declared that the speed of their vessels was retarded by the numerous fish. In addition to the reasons just mentioned, the cheapness of provisions and excellence of boats and mariners aided in the industry. Well did John Smith declare in 1614: "The main staple from hence to be extracted for the present to produce the rest is fish."

Long before that time, however, the fisheries had been opened, for French fishing vessels of Brittany visited Newfoundland in 1504, seven years after John Cabot's report. By 1522 forty or fifty houses had been erected at Newfoundland for use during the fishing season, and interest in fishing was one of the causes of Cartier's voyage in 1534. Although England manifested little interest in the development of the fisheries, she had one-seventh of the 350 vessels in the Newfoundland fishery fleet in 1578; France had 150, Spain 100, and Portugal 50. Friction between the English and French over the fisheries was one of the causes of the colonial wars.

The New England fisheries really began in 1602 with Bartholomew Gosnold, who gave Cape Cod its name because of the large number of fish caught in that vicinity. The fish, he claimed, were better than those on the Newfound-

land banks. Not many years later, John Smith caught about forty-seven thousand cod which he sold at a good profit. By 1624 about fifty English vessels were fishing off the New England coast. Plymouth during its early history depended largely on the fisheries for food, but failed in fishing as a business venture. When Massachusetts was settled, the founders sent over fishermen, salt, and fishing equipment even prior to their own emigration, and as early as 1633 fish were exported from Boston. Hugh Peter, a Salem minister, helped raise capital to put the fishing business on a firm basis. Boston, Marblehead, Gloucester, Manchester, and other ports were engaged in early fisheries. The industry was considered so important that in 1639 Massachusetts exempted from taxation for seven years ships and property employed and excused fishermen and shipbuilders from military duty. Two years later, according to Governor Winthrop, about 300,000 dried fish were sent to market. By the middle of the century New England merchants were sending cargoes of fish to the West Indies where they were exchanged for molasses, rum, and bills of exchange. A somewhat better quality was sent to the Canaries, Madeiras, and Jamaica, but the best were sent to the Catholic countries of southern Europe.

In the English Civil War a ship of Charles I seized some of the New England fishing vessels in 1645, and the early colonial wars had a depressing effect on the industry. By 1731, nevertheless, New England had five or six thousand men employed and the product amounted to 230,000 quintals of dried fish. Cod, sturgeon, mackerel, herring, and salmon were the most important. In 1763 fish exported from New England amounted to £250,900, or slightly more than half of the total export values. Ten thousand tons of dried cod were valued at £100,000; 8,500 tons of whale and cod oil at £127,500; 28 tons of whale bone at £8,400; and 15,000 barrels of pickled mackerel and shad at £15,000.

The whale fisheries were established in the colonies at an early date. When John Smith visited New England in 1614, he intended to engage in the whale fisheries and the mining of gold and copper, but he contented himself with

taking cod. Richard Mather, arriving in Massachusetts in 1635, said that he saw off the New England coast whales "of such incredible bigness that [he would] never wonder that the body of Jonas could be in the belly of the whale." The industry began with the utilization of occasional drift whales; then came the pursuit of whales seen near the coast, and eventually the industry culminated in trips to the Arctic and distant regions. Plymouth, Salem, Nantucket, and villages at the eastern end of Long Island were early important. By 1774 the whale fisheries used about 360 vessels with a tonnage of about 33,000 and employed four or five thousand men, as did the cod fisheries. The latter, however, had nearly twice as many vessels, though the tonnage was somewhat less. Nantucket alone had one-third of the tonnage engaged in whaling. Marblehead, Gloucester, Salem, Ipswich, Yarmouth, Plymouth, and Chatham were the leading cod ports. The total value of the products of the cod fishery was about two million dollars and its importance is still attested by the codfish memorial in the room where the Massachusetts House meets. For commerce as a whole the whale fisheries were more important than the cod, because the necessity of pursuing the whale to distant waters led to a material increase in the size of vessels.

Fisheries, 1776-1815.—The Revolutionary War stopped the fisheries and thus occasioned the loss of fifteen or more million dollars in products, and the further loss from decay of wharves, vessels, and other property of perhaps a million more. In the treaty of peace, 1783, chiefly because of the efforts of John Adams, fishing privileges practically equal to those of the colonial period were obtained. Americans could fish off the Grand Bank, in the Gulf of St. Lawrence, in other places where they had formerly fished, and could, moreover, dry their catch in certain unsettled regions.

The closing of the British and French West Indies to our commerce deprived us of good markets, and, though the French soon relaxed their restrictions, the Tariff of 1789 by imposing duties on salt and material used in fishing, brought about temporary distress. With the improvement of commerce especially with the West Indies, Portugal, and

Spain, the New England cod fisheries revived, prior to 1789, but the tonnage of 26,522 in 1789-1790 was only a thousand more than the average from 1765 to 1775. Whale fishing for a quarter of a century was on a precarious footing. From 1790 to 1808 in total value of all fish products there was a steady gain and for the five years which ended in 1807 the exports were valued at $14,872,423, but the embargo, 1807-1809, practically annihilated the trade. After the repeal of that measure, a temporary revival of the fishing industry followed, but the exports for the three years 1809-1811 amounted to only $4,604,000, or about half the yearly average for the five years prior to the passage of the embargo, and in 1814 the exports fell to only $188,000, or less than a fourth that of the embargo year. Tonnage in both whale and cod fisheries declined 1807-1814, with, of course, fluctuations.

Congress by bounties and allowances tried to encourage the industry and from 1791 to 1808, according to Adam Seybert, paid out nearly $500,000 for the former, and from 1793 to 1808 inclusive over $1,750,000 for the latter. After 1809 payments decreased and apparently stopped during the War of 1812. Seybert summarized the effects of that struggle with particular reference to the whale fisheries as follows:

> During our late war, the fisheries were entirely suspended, even on our own coasts. Those who had engaged in the whale fisheries sustained heavy losses not only in consequence of having been driven from the ocean, but also from the suspension of their pursuits on shore. Our eastern people expended much for the establishments in which they made spermaceti oil and candles—that capital was unproductive; and during the war the British captured twenty-four of our whale ships.[1]

Government Bounties.—In the period from 1815 to 1860, the government tried to encourage the fishing industry by bounties. As the legislation several times amended stood at Kettell's time, about 1860, a vessel under the law of 1855 if more than five tons and less than thirty received $3.50

[1] *Statistical Annals of the United States of America*, 338.

a ton and if over thirty tons, $4.00. Bounties paid out since the formation of the government had amounted to nearly $13,000,000, of which nearly a third had been paid out in the last twelve years. Massachusetts had received nearly $8,000,000, and Maine more than half as much; the only southern state to benefit was Virginia with $479.

Fisheries, 1815-1860.—The most important fishery at the close of the period was the cod which employed 110,000 tons, or three times the amount used in 1795. Farmers often took part in the cod and other fisheries during their spare time. The herring and salmon fisheries of the East declined during the pre-Civil War period, Kettell thought, because of the obstruction of the waters by dams. The salmon fisheries of the Pacific coast, on the other hand, were so extensive and marketing was so difficult that a navigator declared that in the Columbia River he had purchased a ton of salmon for a jackknife. The halibut fishery developed to some extent toward the close of the period, and the mackerel fishery, chiefly localized in Maine and Massachusetts, had a catch of from 131,000 to 360,000 barrels and employed about 1,000 vessels and 10,000 men. Gloucester alone sent out about 400 schooners with an average tonnage of 90 and value of $4,000.

Oysters had been regularly sold in colonial days, but the real expansion of the industry came after 1825. The season began about September 1, and the oysters were taken in nets which had iron scrapers on the lower edge. Large dealers usually purchased their oysters in Virginia waters and took them north to plant until they were fat. The value of this Virginia oyster trade, if Kettell is correct, was about $20,000,000, of which New York took nearly $7,000,000, Baltimore $3,500,000, and Philadelphia $2,500,000. Baltimore's oyster trade was considered more valuable than her wheat trade. Canned oysters were sent west by the hundreds of pounds each day, and oyster shells were widely sold for fertilizers.

Another fishery, carried on primarily for fertilizers, is thus described by Thomas P. Kettell:

One of the most remarkable fisheries is carried on in Long Island Sound and some other localities. It is the taking of what are called bony fish for manure. These fish go in immense schools, which show themselves in ripples upon the surface of the water. They are taken by nets, which may be seen by the steamboat traveller, hung upon immense reeds at the water's edge to dry. These nets are weighted with lumps of lead at the lower edge, having floats at the top, so as to keep them upright in the water. The fishers, in boats pay out the net from one and the other, and encircle the school with it. The two ends then being carried to the shore are drawn in with great force and an immense haul of fish results. With the bony fish, many of a better class are caught but if the aggregate will not equal 150 cartloads it is not thought large. These fish are spread upon the land as fertilizers. They are far better for the land than for the neighbors who for miles round suffer odors not from "Araby the blest."[2]

In the colonial period the main center of the whale fisheries had been Nantucket, but before the Civil War New Bedford, New London, and Fair Haven in the order named ranked ahead of the early leader. The fishermen in the whaling industry were vitally interested in the catch, for each man obtained a share if the voyage were successful, but otherwise nothing. The share of officers and men generally equalled one-third of the catch and since each man received a certain number of gallons proportioned to the whole, he was vitally interested in the price.

River and lake fisheries have always been of local importance and in more recent times of commercial importance. Perhaps 3,000 barrels were taken in Lake Superior in 1860, five times as many in Lake Michigan, 14,000 in Lake Huron, 3,000 in Lake Erie, 7,000 in Detroit River, and 10,000 in other rivers tributary to the lakes. Estimated at ten or eleven dollars to the barrel the total value was thus more than $500,000.

Kettell believed that the total value of the fish and fishery products was more than $48,000,000, but according to census figures, it was little more than a fourth of that amount. If the latter figure be accepted for the manufac-

[2] *Eighty Years' Progress*, Vol. I, 385.

tured product Massachusetts had about three-fourths and Maine and Connecticut a little less than one-tenth each. Boston and Gloucester were the principal ports in the fishing trade and in the words of the *Preliminary Report*

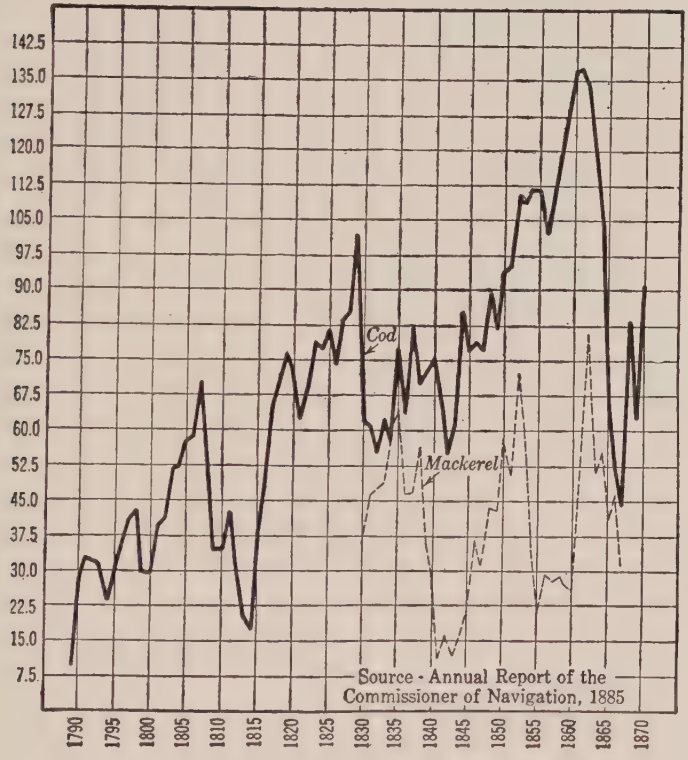

CHART NO. 71. TOTAL TONNAGE IN COD FISHERIES AND ENROLLED TONNAGE IN MACKEREL FISHERIES. UNIT—1,000.

on the Eighth Census Gloucester had "become the largest seat of the domestic fisheries in the United States, if not in the world," and distributed "the products to all the large cities of the Union and to foreign countries."

Decline of Whale Fisheries.—With the discovery of oil in Pennsylvania, in 1859, the prosperous days of the whale

fisheries ended. During the Civil War at least fifty whaling boats were either captured or destroyed; for instance, toward the close of the war the *Shenandoah* entered Bering Sea and captured twenty-nine whaling boats, all but four

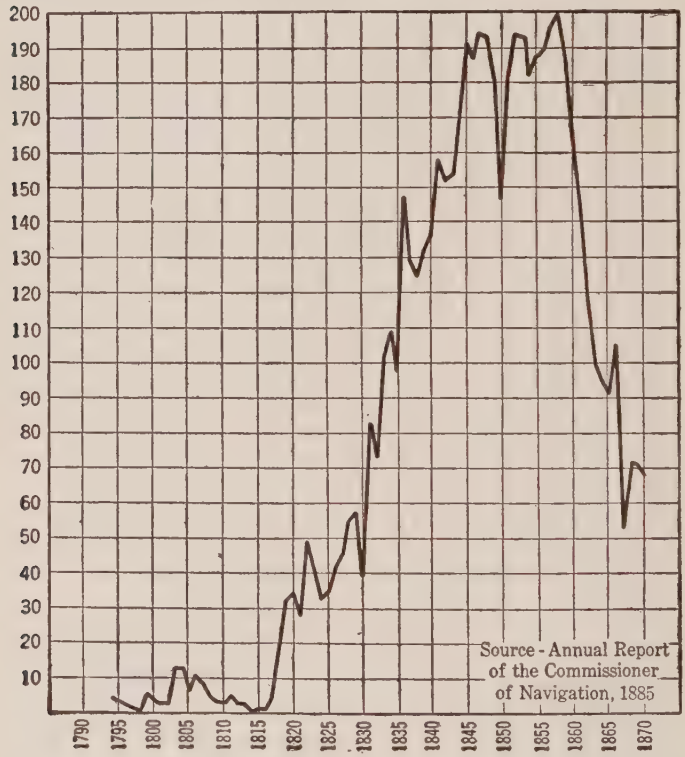

CHART NO. 72. TOTAL TONNAGE IN THE WHALE FISHERIES. UNIT—1,000.

of which were burned and sunk. Tonnage employed fell from 166,841 in 1860 to 84,233 in 1865, and though there were slight recoveries in certain years the general tendency was downward until by 1900 there were only forty-two boats with a tonnage of 9,899. In 1871 thirty-four vessels of the Pacific fleet were lost through the closing of an ice

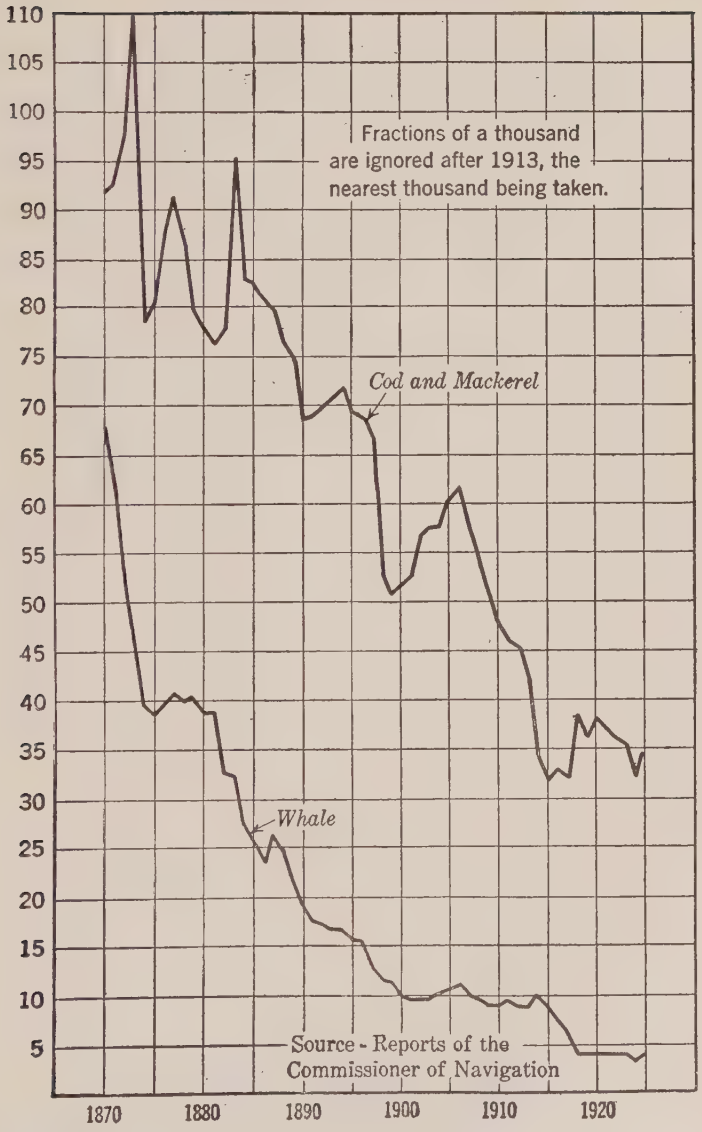

CHART NO. 73. TONNAGE IN FISHERIES SINCE 1870.

pack in the Arctic Ocean, and five years later numerous other vessels were lost in a similar disaster. By 1880 only Massachusetts and Connecticut on the Atlantic coast had whaling fleets, for one by one important ports had dropped from the list. In 1869, for example, Nantucket, the original seat of American whaling, sent out its last whaling vessel. In the same year San Francisco became a whaling port, but though it was nearer the whaling grounds than the Atlantic ports and thus possessed a distinct advantage, it reached the climax of its prosperity in 1892 and thereafter suffered a decline. Whaling is now almost negligible in value of product, though the total tonnage employed in 1925 was about 4,000, or less than half of that used in 1900.

New England Fisheries Since 1860.—New England cod and mackerel fisheries reached the maximum point of development in 1862 with a tonnage of 204,197, but four years later, chiefly because of war, tonnage had fallen to 98,231, and only once thereafter did it reach 100,000. All tonnage employed in the cod and mackerel fisheries amounted to only 51,629 in 1900, and with some fluctuations the tonnage declined to about 35,000 in 1925. The marked decline in deep sea fisheries since 1885 has been due in large part to the development of cheaper kinds of food fish, such as oysters, salmon, sardines, herring, and shad. Of course, the men formerly engaged in the deep sea fisheries found it more profitable to develop the inshore fisheries and to supply visitors with fresh fish.

Herring, shad, squeteague, and menhaden are other important New England fishing products. The herring fishery increased in prosperity after the close of the Civil War. Toward the end of the nineteenth century Maine had nearly three-fourths of the catch and Massachusetts practically all of the remainder. The herring fisheries supported three important industries: frozen herring, smoking and pickling of herring, and canning of sardines. Frozen herring have been widely used as bait for the deep-sea fisheries, and so the industry depended chiefly upon the condition of the deep-sea fisheries. Smoked and pickled herring establishments were located principally in Lubeck and Eastport,

Washington County, Maine. The sardine industry, the most important branch of the herring business, began about 1875. Maine has held a virtual monopoly. Ten years after the first cannery was erected there were thirty in the state and the products were worth over a million dollars and by 1900 four times as much.

The shad fishery is of considerable importance and ranks next after oyster, salmon, and cod fisheries. The largest part of the catch came from the rivers of the Middle and South Atlantic States to which the shad went for the purpose of spawning. River herring fisheries were slightly more important in New England than were the shad fish. The weakfish, or squeteague, fisheries, were worth more by the close of the nineteenth century than either shad or river herring. The menhaden fishery became important in New England about the time of the Civil War and grew steadily until 1877, when there were more than sixty menhaden oil and fertilizer factories on the New England coast with a capital of three million dollars and an output worth more than a million. By 1880, however, because of the decreased supply of fish, many factories, especially in Maine, were closed and there was, of course, a marked decrease in the oil and fertilizer produced. New England oyster fisheries, though less important than those of the Middle States, were fairly valuable, and in 1889 the output of Connecticut, the leader, was worth a little more than a million. The lobster ranks second to the oyster as a shellfish. In 1900 about nine-tenths of the total product came from New England and more than half from Maine. As early as 1879 Maine commenced to regulate the industry and within five years all of the other New England States had laws to protect the fishery; in no state could lobsters less than nine inches in length be taken, or could the females carrying eggs be destroyed. Clam fisheries have been carried on in New England since colonial days, but they were of little commercial significance prior to 1860 and a decline occurred in their development after 1898.

In 1880 the total value of the New England fishing catch was $12,503,021, and in 1919, $19,838,657. The catch, on

the whole, with fluctuations, to be sure, has declined in the last thirty years. In 1889, the amount was 653,170,040 pounds, and in 1924, 406,822,165. Massachusetts is easily the leader with over half the product, and Maine with a fourth ranks second. Judged by the value of the products landed at Boston, Gloucester, and Portland, haddock and cod are easily leaders. At Boston haddock, with nearly half of the 149,038,000 pounds landed by fishing vessels of five tons or more in 1925, was first. Over half of the 49,472,000 pounds landed at Gloucester was cod; at Portland haddock made up nearly half of the 18,359,000 pounds. In 1925 the ranking for the three ports was: haddock, cod, mackerel, hake, and pollock. A post-war depression affected the New England, as it did other fisheries, but 1922-1923 saw renewed prosperity, for New England's catch increased about six per cent over the preceding year and gains occurred in Maine sardines and tuna "as well as in the production of fish oil and by-products." The three chief ports —Boston, Gloucester, and Portland—had their total values increase from $5,465,932 in 1922 to about $7,000,000 in both 1923 and 1924, and to more than $8,000,000 in 1925.

Middle and South Atlantic and Gulf Fisheries.—During the early half of the nineteenth century and up to the Civil War the fisheries of the Middle Atlantic States developed steadily. The incomplete Census of 1840 showed nearly 8,000 people employed in Maryland alone, chiefly in the oyster fisheries. North Carolina and Maryland then produced over 70,000 barrels of pickled fish apiece, and New York, Delaware, and Virginia each produced more than 20,000. New York, moreover, ranked next to Massachusetts and Connecticut in the value of whale products. By 1860 the annual value of the fisheries was over $1,000,000; it consisted chiefly of New Jersey, New York, Virginia, and Maryland oysters. When the Civil War broke out, southern fisheries were almost completely stopped, but after the close of the war they resumed a healthy growth. The Gulf fisheries did not develop until after the Civil War, but their growth was rapid.

The oyster fishery by 1900 was the most important in the

country. By 1870 the product of Maryland alone exceeded 10,000,000 bushels and was valued at more than $4,000,000. The first complete survey made in 1880 showed Maryland, Virginia, New Jersey, New York, and Delaware in the leading places; of the 22,195,000 bushels produced, Maryland had nearly half and Virginia about a third. Since 1880 the oyster industry has been subject to considerable fluctuations; in 1885 the industry reached its maximum. From 1875 to 1890 Maryland had the greatest oyster industry in the world and Baltimore was the most important oyster trade center the world had ever known, but thereafter a decline occurred.

Of the other shellfish caught on the Atlantic and Gulf coasts, clams and crabs from the Middle Atlantic States, and shrimp and prawn from Louisiana and Mississippi, were most important. The hard clam, or quahog, industry, was carried on from Maine to Florida, but at the close of the nineteenth century Virginia was the leader and she with Maryland led in crab fisheries, though New Jersey had taken half of the catch in 1880. At that time the Atlantic catch of shad amounted to 18,000,000 pounds and in 1900 to 50,000,000. Since 1896 a decline has occurred. Not until after 1870 were any sturgeon fisheries of importance established, but processes of preparing roe for caviar were rapidly perfected and by 1880 the sturgeon fishery was of importance. Caviar advanced from ten dollars a keg in 1885 to four times that by 1894 and under the stimulus of high prices reckless fishing occurred. About 1890 the catch was twelve to fifteen million pounds, the highest point attained. Among the other fish in the Atlantic and Gulf regions were alewives, squeteague, mullet, snapper, blue fish, Spanish mackerel, and flounder; they were found all the way from New York to Texas, though, of course, in varying abundance. Florida was the leader in mullet, snappers, Spanish mackerel, and sponges.

Only two of the fisheries—menhaden and sponge—will be noted in any detail. Menhaden has little value as food, but it has formed the basis of an industry which employed thousands of men; it has proved valuable as a bait for

other fish, as a fertilizer, and as a source of oil. The menhaden is the most prolific and abundant fish found in the Atlantic. It is migratory and appears each year with the coming of warm weather in the shallow waters within two miles of the coast all of the way from Maine to Texas. Since 1884, the high point when the product was worth $2,800,000, the industry has shown a tendency to decline and to shift southward. From 1908 to 1918, however, the total catch of fish for the South Atlantic States practically doubled and this was due chiefly to the increased catch of menhaden. In 1923 the total catch for the South Atlantic States amounted to 228,747,930 pounds, a marked decline from 1918, and the value to $5,087,340.

Florida is the most important center of our sponge fisheries, with Key West and Tarpon Springs prominent points. The fishery really started about 1850, though development was at first slow, with the rise in price of the Mediterranean sponges. By 1880 the catch amounted to 207,000 pounds and was worth $201,000. Growth continued from 1880 to 1900, when the catch reached a value of $568,000. While the supply in shallow waters was abundant, sponges were taken by hooks fastened to long poles, but with the depletion of shallow water beds about 1884, Greek divers were imported from the Mediterranean. Because diving injured the sponges, it was prohibited by the Florida legislature, but before the nineteenth century closed divers were again introduced to take the sponges beyond the three-mile limit.

Pacific Coast Fisheries.—The Pacific Coast fisheries include those of California, Oregon, Washington, and Alaska, but only the seal fisheries antedate 1850. The most important fishing ground is north of Puget Sound. Although salmon fisheries, like many others, were utilized by the Indians and early white settlers, the first commercial fisheries did not begin until about 1852 when settlers in the vicinity of the present Seattle began to catch fish and sell them either fresh or salted at various places along the coast. In 1861 an industry on the Columbia at Oak Point about sixty miles from Portland was started for the purpose of

packing salted salmon. Three years later the salmon-canning business was begun on the Sacramento River near the site of the present Sacramento by a few New Englanders who put up two thousand cases of forty-eight one-pound cans. At the beginning they had considerable difficulty in selling the product, but a commission house finally succeeded in selling part of the pack in Australia. In 1866 the same group erected a cannery at Echo Cliff, about forty miles above Astoria on the Columbia, and other canneries followed until by 1880 Columbia canneries were producing about 500,000 cases a year. In 1878 the first canneries were started in Alaska, and since 1899 the Alaska canneries have generally led the Puget Sound fisheries, which, in turn, are ahead of the Columbia River fisheries. These three districts contribute about nine-tenths of the canned-salmon output. Legislation has, of course, united with artificial propagation in an effort to keep the supply replenished. The Pacific Coast salmon pack in 1920 was 6,289,321 cases, and that of Alaska added 4,429,463 more cases.

Of the other western fisheries, whale, halibut, cod, oyster, and shad deserve mention, though only the seal fishery will be discussed to any extent. The western whale fisheries, as already noted, started about 1850 and commenced to decline after 1893. The halibut fishery began about 1868, but development was not rapid until after 1888. The cod fishery commenced off the Alaskan coast about 1866 and development was at first rapid, but lack of a market and the preference of capital for promising salmon fisheries led to a decline until about 1890, when the industry was stimulated by a new method of preparing cod as boneless fish. Oyster fisheries, though of some importance, have not thrived much, because of the danger of freezing and the failure of eastern oysters to propagate. Between 1871 and 1886 the United States Fish Commission introduced shad in the Sacramento and Columbia rivers, but though they spread rapidly there has been little demand for their use as food fish. Herring, halibut, and cod fisheries have been important Alaska industries in recent years.

The fur-seal fishery of Alaska has ranked second to the salmon fishery in importance for some time. When the United States purchased Alaska from Russia in 1867, she obtained possession of the Pribilof Islands. In the same year two men in behalf of California and New England capitalists went to the islands, seized the rookeries the next year, and slaughtered about 300,000 seals. In 1870 Congress limited the season of killing to June, July, September, and October, declared unlawful the killing of female seals or those less than one year old, limited the catch for twenty years to less than 100,000, and required the taking out of a license for the killing of seals. The Alaska Commercial Company, a California corporation, received the privilege of the seal fisheries for a sum of $55,000 a year and a stated duty on each pelt. In 1890 the North American Commercial Company received the privilege, having promised to support the natives, as in the case of the former company, to limit the seals killed to 60,000 a year, and to pay $60,000 a year rental and a tax of $9.625 on each pelt taken, in comparison with $2.625 in 1870. While the Alaska Commercial Company had the privilege, the catch was about 100,000 a year, but the destruction was so rapid that in only one year did the catch of the American Commercial Company exceed 30,000, and in several it fell to less than 10,000.

A more important factor in the reduction of the size of the seal herd than the island catch was deep sea or pelagic sealing, which, though practised for dozens of years by the Indians, was of minor importance until after 1879. About that time the practice of sending vessels from Japan, Russia, and the United States began. From these boats in Bering Sea and from innumerable canoes seals were killed with rifles and shotguns. Within a short time the catch of the seal fleet affected in a marked way the skin market and the depredations of the sealers exercised a disastrous effect upon the seal herd. Because the male and female seals closely resemble each other, there was an indiscriminate slaughter of both sexes, and in 1896 over 16,000 young seals were starved because of the death of their mothers.

Deep-sea sealing, moreover, led to a great waste, for only a small part of the seals killed or wounded were actually landed. Complete extermination of the seals was prevented in 1910 by legislation concerning killing on Pribilof Islands and in 1911 by treaty when pelagic sealing was prohibited. The effect appeared at once, for the seals increased from 215,000 to 697,158 in 1924. In recent years the number of seals killed has been about 25,000 a year and the value a million dollars; in 1924 seals killed for their skins numbered 17,219.

The value of the Pacific Coast State fisheries increased from $2,993,101 in 1888 to $18,935,136 in 1923, and the catch from 71,882,882 pounds to 409,914,397. Washington led in value by a slight margin, but California had over half of the total catch. Alaska's catch in 1925, not included in the figures just given, amounted to about 595,000,000 pounds.

Lake Fisheries.—Although the Great Lakes fisheries have never been of importance in comparison with the ocean fisheries, they increased rather steadily during the nineteenth century, especially 1880 to 1890, with fluctuations, to be sure, when the catch jumped from 68,742,000 pounds to 113,898,531. Since then the tendency has been to a stationary position, if not downward. Although forty or more varieties are found in the lakes, the most important fish are the lake herring or ciscoes, lake trout, pike-perch, white fish, yellow perch, German carp, suckers, pike, and pickerel. In the early period white fish were by far the most important, and as late as 1880 contributed a third of the value, but by the close of the century the yield had fallen to 6,683,000 pounds, or less than a third of the catch of 1880. Sturgeon fisheries likewise declined, the decline being due as in the case of the white fish, to over-fishing, destructive methods, and the poisoning of the water and spawning grounds by sawmills.

From 1880 to 1890 the herring catch increased from 15,968,000 pounds to 59,914,000 pounds, but toward the close of the century a decline began. During the present century the catch on Lakes Erie, Michigan, and Ontario

has shown a tendency to decline, though the former gained, 1917-1922, and that on Lakes Huron and Superior to increase slightly, except 1903-1908 and 1917-1922 for the latter. Fluctuations have, of course, occurred on the different lakes. Lake St. Clair and St. Clair and Detroit rivers have shown a marked decrease, due largely to legislation. In spite, however, of the decreased or practically stationary catch, the value of the lake fisheries has rather steadily increased. It amounted to $6,297,969 in 1917 and to $6,689,611 in 1922, the total catch in the latter year being higher than in 1903, 1908, or 1917.

River Fisheries.—The rivers, lakes, and ponds have long supplied local fishermen with work. The catch of the Mississippi River and its tributaries has rivalled that of the Great Lakes in value. Prior to 1880 no statistics were collected on the value of the Mississippi River fisheries, but in that year they amounted to $1,400,000 and in 1894 to $1,600,000. Illinois was easily leader. Among the important fish taken were carp, mussels, buffalo-fish, catfish, fresh-water drum, and black bass. Carp were introduced into this country for propagation purposes in 1877 and from 1879 to 1896 they were widely scattered over the country, but their real commercial development did not come until the next century. Up to 1891 mussels were taken only with the hope of finding pearls, but in that year a German mechanic erected at Muscatine, Iowa, a factory for making buttons out of mussel shells and by 1899 sixty button factories had been constructed in Iowa, Illinois, Missouri, and Wisconsin. These factories used yearly about 12,000 tons of shells and turned out a product worth about $1,000,000. In 1908 the Mississippi River Division catch amounted to 148,284,000 pounds and the value to $3,125,000; the catch was thus greater, though value was less, than that of the Great Lakes product of 1917. In 1922 the total catch amounted to 105,733,734 pounds and the value to $4,503,521 for all reported rivers.

Importance of Fisheries.—The number of persons engaged in our fisheries is now about 200,000, the vessels employed 6,000, the boats used 76,000, the capital invested

FISHERIES, A SUMMARY

Section	Year	Persons Employed	Vessels Employed	Boats Employed	Capital Invested	Catch, Pounds	Value
New England	1924	24,513	777	10,022	$28,561,824	406,822,165	$18,818,132
Middle Atlantic	1920 and 1921	55,244	1,898	20,506	38,774,431	863,681,626	24,407,785
South Atlantic	1923	16,298	280	6,016	8,505,259	228,747,930	5,087,340
Gulf States	1923	17,793	492	6,809	10,535,905	160,324,042	8,096,650
Pacific Coast	1922	22,270	698	5,214	28,651,490	282,968,421	12,983,583
Mississippi River Division	1922	19,122	13	15,538	7,345,034	105,733,734	4,503,521
Great Lakes	1922	8,039	606	3,661	12,046,458	108,732,443	6,689,611
Lake of the Woods and Rainy Lake	1922	123	1	95	139,955	1,677,999	110,022
Alaska	1925	27,685	931	6,201	67,077,495	594,901,143	10,232,042[2]
Total	Various years	191,087	5,696	74,062	201,637,851	2,753,589,503	90,928,686

[1] Figures for Maryland and Virginia are for 1920, for other states 1921.

[2] Estimated value to fishermen, which was only a fourth of the value as prepared for the market.

over $200,000,000, and the value of the products approximately $100,000,000. Not only in New England, but all over the country there was tendency toward recovery from post-war depression in 1922-1923. The Pacific Coast, for instance, showed a forty-five per cent increase in salmon packing and gains occurred in Maine and California sardines and tuna "as well as in the production of fish oil and by-products." The government distributed for the year ending June 30, 1925, about 1,050,393,000 eggs, 4,114,514,000 fry, and 136,954,000 fingerlings. State laws, of course, minutely regulate fishing in interior waters.

Fisheries in Diplomacy.—One of the justifications for the somewhat detailed treatment of the fisheries is their importance in commerce and the merchant marine, as well as their value, about one-fifth that of the world's commercial product, but another reason, only to be lightly touched here, is their diplomatic importance. The provisions of the Treaty of Paris of 1783 have already been noted. In 1818 a convention between Great Britain and the United States attempted to settle differences over the interpretation of the Treaty of 1783 and required American fishermen to give up rights to dry or to cure fish on portions of the Canadian coast which had been settled since 1783. By the Reciprocity Treaty of 1854 the fishermen of the United States received liberties similar to those of 1783; they were admitted to the deep-sea fisheries of British America and were allowed to take all fish north of the thirty-sixth parallel except shellfish. The United States terminated the treaty in 1866 because the farming interests believed that the remission of duties on Canadian fish was of greater value than the concessions given our fishermen. In 1871 arrangements of a somewhat similar nature to those of 1854 were made, except that freedom of trade was limited to fish oil and fish, and that the line below which British fishermen could not go was made the thirty-ninth parallel in place of the thirty-sixth. The treaty was to last for ten years and thereafter until terminated by two years' notice by one of the parties. Because the British commissioners contended that they gave more valuable provisions

than they received, the Halifax Convention in 1877 decided that the United States should pay the British government $5,500,000, which, after some protests, she did. In 1883 the United States gave notice and two years later the treaty came to a close.

After the termination of the treaty the Canadian government forbade, under penalty of seizure, any foreign vessel from entering Canadian jurisdiction for purposes not allowed by treaty or convention. In 1887 Congress, by way of retaliation, authorized the president to deny, at his discretion, any British American vessel entrance to our ports with certain exceptions in regard to distress or supply. This difficulty led to the Chamberlain-Bayard Convention of 1888, which, however, failed of ratification by the Senate. A *modus vivendi* then allowed our ships to enter the bays and harbors of the Atlantic coast of Canada and Newfoundland to buy bait and supplies, to transship fish, and to ship crews in return for a license fee of $1.50 a ton.

The Newfoundland people desired the free admission of their fishery products into the United States and tried to force this by placing restrictions on the fishermen of the United States. Shortly after the termination of the Treaty of 1871 Newfoundland enacted a law which forbade the sale within the colony of bait, ice, and supplies to foreign fishermen unless special licenses were obtained from the Newfoundland government. The Blaine-Bond Convention of 1890 granted the fishermen of the United States the same right as other foreign fishermen had to buy bait in Newfoundland, but because it was not ratified the old license system continued. The Newfoundland law of 1893 continued the license system and, moreover, forbade without license, the hiring of a crew within Newfoundland waters. In 1905 Newfoundland prohibited entirely the purchase of bait by foreign vessels and the engagement by them of crews within Newfoundland waters. Bait found on vessels by Newfoundland officials was considered evidence of guilt. In 1906 the law was suspended and a sort of *modus vivendi* was established. Because this was renewed in both 1907

and 1908 conditions went on much as before. In 1909 the whole question of the North Atlantic fisheries was submitted to The Hague Tribunal and the decision given in 1910 was favorable to the United States, for most of her claims were accepted and not one was completely denied. Great Britain was conceded the right to make regulations as inherent in her sovereignty, but the United States could employ sailors outside of the country, though the foreigners could not draw benefits from the treaties. American ships were to report under certain conditions, if required, at customs houses and were not to abuse port privileges. The United States was upheld in her claim to fish along the entire coast line of the "treaty coast," for the word "coast" did not, as the Canadians claimed, exclude the bays, creeks, and harbors, which were valuable for the fisheries. The boats of the United States were, moreover, supported in the exercise of commercial privileges.

The dispute over the fur-seal fishery began in 1886 when three Canadian vessels were seized by a United States revenue cutter about sixty miles from land. The vessels were condemned for violating the United States legislation relative to the killing of seals. The United States government held that by purchase it had acquired jurisdiction over Bering Sea east of the one hundred and ninety-third degree of west longitude, but the British government insisted that the jurisdiction of the United States did not extend beyond the three-mile limit. Although at President Cleveland's order the vessels were released, still others were seized in 1889 outside of the three-mile limit when the pelagic sealers continued their operations. This time the United States asserted that it owned the seals and had a right to protect them. After several exchanges, however, arbitration at Paris in 1893 went against the United States. Regulations were, nevertheless, drawn up to suspend pelagic sealing during May, June, and July in Bering Sea, and to stop it permanently within a zone of sixty geographical miles around Pribilof Islands. Vessels engaged in sealing were required to take out a license, and the use of nets, firearms, and explosives was prohibited.

Although both England and the United States passed laws to enforce these regulations, the rules were ineffective, for the seals went beyond the limit, and, moreover, Japanese sealers and Canadian vessels under the Japanese flag captured seals just outside the three-mile limit. The seals decreased rapidly, but although a joint commission of Great Britain and the United States decided that this was due almost entirely to the killing of the female seals, nothing was done for several years. In 1911, by treaty, all pelagic sealing was stopped for fifteen years. The United States assumed all sealing operations and agreed to give Japan and England a royalty of fifteen per cent on seals taken on Pribilof Islands, $200,000 for seals already taken, and during completely closed seasons to pay each government $10,000 a year.

Colonial Fur Trade.—Of much less importance than the early fisheries and of decreasing importance throughout the period because of the settlement of the country was the fur trade. In early settlements, however, trapping or fur trading was important and it was, moreover, a spur to exploration and the westward movement. The New York Dutch early prepared furs for the European market and were soon sending them home at the rate of 66,000 a year. Gorges and Mason obtained some furs from their early ventures in Maine and New Hampshire; from 1631 to 1636 the Plymouth Colony sent to London £10,000 worth of beaver, and the otter and black fox furs were nearly as valuable.

The trade in furs with the Indians contributed an important item to colonial exports, for the Indians gladly supplied furs in exchange for beads, fancy cloths, blankets, guns, ammunition, tools, whisky, etc. The trade persisted throughout the seventeenth and eighteenth centuries, but its location shifted and its volume decreased with the settlement of the country. It was largest in New York, but it was extensively practised in New England and other colonies. Naturally the various Indian wars, such as the Pequot War in 1637, King Philip's War in 1675, and the Susquehannock War in 1675, 1676, interfered with the

traffic. The main reason for Bacon's Rebellion in 1676, it might be noted, was the refusal of the Virginia governor and other authorities to punish the Indians for their depredations. The British authorities were interested in the fur trade and did not want it disturbed.

The continued growth of the English population, of course, meant the decline of the fur trade, for when men moved in as farmers the fur-bearing animals tended to move out. Unlike the English, the French and the Spanish failed to settle permanent agricultural communities and they, moreover, assimilated with the Indians, especially the French who lived the Indian life, painted their bodies, went on the warpath, and married Indian women. The Indians naturally, with some exceptions, as the Iroquois of New York, who could not forget Champlain, favored the French and an increasing percentage of trade, in spite of the inferiority of their goods as compared with the English, went to the French. William Clark, who wrote about 1755, declared that if the French were allowed to continue their measures they would engross "the whole Furr and Pelt Trade," for at that time English fur imports from all sources amounted to only £90,000 yearly, whereas those of France amounted to £135,000. By that time New York and New England were less important in the fur and skin business than the other colonies, but it is well to note that those things were generally worked up at home and did not enter into the export trade to any extent. About 1763 Pennsylvania exported deer and "sundry other sorts of skins" to the value of £50,000, Virginia and Maryland to the value of £25,000, and Georgia to the value of £17,000. In 1770, according to Macpherson's *Annals of Commerce,* the British continental colonies, which included Newfoundland, Bahama, and Bermuda, exported furs to the value of about £91,486 and some 799,652 pounds of deer skin worth approximately £57,739. These figures, nevertheless, show that the trade was declining, for it must be remembered that the English by conquest had seized all of the French trade.

Trapping and Fur Trading Since 1776.—After the col-

onists had won their independence, the British, contrary to treaty, retained the fur posts in the west, for their trade was worth about $1,500,000 a year. One of the provisions of the Jay Treaty of 1794 was that these posts should be evacuated by June 1, 1796. One of the first settlements on the western coast, Astoria, 1811, was founded at the mouth of the Columbia by John Jacob Astor in an effort to secure the fur riches of the Northwest. Astor, backed by eastern merchants, however, lost in his battle with the great Canadian companies, "Hudson's Bay and the Nor' Westers," but the Boston merchants "were reaping a golden harvest in sea otter along the Pacific Coast as far north as Alaska." A hundred years ago fur brigades floated down the rivers to Montreal, St. Louis, and other places. Concerning the conditions at St. Louis, Agnes C. Laut declared:

> . . . The arrival of the boats and canoes from the Up Country at the muddy flats of St. Louis was celebrated noisily, bibulously, and hilariously. The men of the mountains with long hair tied back by twisted colored handkerchiefs, or topped by coon caps, and dressed otherwise in buckskin from coat to moccasins, men who strode erect as an Indian or an arrow, if they had not had too much Jamaica rum—literally owned the little frontier town.[3]

According to Professor Isaac Lippincott, the annual value of the fur business at St. Louis amounted to about $250,000 and from 1842 to 1860 the average value of the furs received at New Orleans was close to $500,000. The high point, 1852, was about double that amount. From 1861 to 1880 a period of lethargy occurred, but a revival has since taken place.

Many furs of the smaller animals, such as muskrats, skunks, foxes, squirrels, coons, rabbits, etc., are taken in the United States, but the most valuable fur-bearing animals are found in Canada and Siberia. The seal, though a fur-bearing mammal, has been discussed in connection with the fisheries. The seal, otter, beaver, and muskrat,

[3] *The Fur Trade of America* [The Macmillan Company, New York, 1920] 16, 17.

found near streams, and such land animals as the skunk, raccoon, opossum, martin, mink, and various kinds of foxes are widely sought for their furs and are still found in the United States. Louisiana has a fur income of about $5,000,000, divided among 15,000 people. About 3,000,000 wild muskrats are taken yearly. In the sparsely settled Rocky Mountain region some of the largest and most valuable of the animals are found. Trapping is, of course, a frontier industry and is still carried on in forested districts. St. Louis and St. Paul, early stations of the fur trade, are yet important primary markets for furs. Now, however, fur farming in the United States and its possessions is becoming somewhat common.

Although trapping is declining, fur trading is increasing and the World War resulted in a transfer of the fur trade from Europe to America. Now perhaps 100,000,000 skins, including rabbits, muskrats, and moles, are sold annually in the United States and Canada. An ordinary fur sale of a week's duration in Montreal amounts to from $5,000,000 to $6,000,000, in New York from $12,000,000 to $27,000,000, and in St. Louis from $27,000,000 to $30,000,000. Before the European War the total fur trade of the United States amounted to about $40,000,000, but by 1920 to more than $100,000,000. In New York alone 830 manufacturers of fur, 170 importers of fur, 25 firms devoted to dressing furs, 12,000 dressers and dyers, made a population of about 60,000 people earning their living from furs, or "more than there are hunters and trappers from the Rio Grande to the Arctic Circle." In 1923 the manufacture of fur goods amounted to $198,043,000 and of dressed furs to $25,467,000. Exports of undressed furs in 1925 amounted to $21,814,000 and that of dressed furs raised the total to more than $26,000,000. In its best days of monopoly the Hudson Bay Company did not sell more than $500,000 worth of fur yearly, but to-day the Edmonton, though only one of a dozen large companies in America, handles more than that amount.

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CHAPTER XV

TRANSPORTATION FACILITIES

The statement of the chapter title implies to the reader of to-day three kinds of transportation facilities—conveyance by land, water, and air—but to the man of our early colonial period it would have implied only one unless he lived on the banks of a river or near the seacoast. Even then, perchance, travel by land would have been ruled out because of the dangers and difficulties of the latter in comparison with river traffic. To land travel we wish to turn our attention first, even though the early settlers lived near the seacoast and thus had little need of roads.

Early Roads.—When the settlers moved into the interior of the country and away from the rivers, they were compelled to open roads, some of which were deer licks, Indian trails, and highways blazed through the woods. Sam Walter Foss was conceivably right when he penned *The Calf Path,* which begins:

> One day through the primeval wood
> A calf walked home, as good calves should;
> But made a trail all bent askew,
> A crooked trail, as all calves do.
>
> Since then two hundred years have fled,
> And, I infer, the calf is dead—
> But still he left behind his trail,
> And thereby hangs a moral tale.

The poet then told how a dog went over the trail, later a bell-wether sheep, followed by its flock, and next how men made a path which widened into a lane, a road, a village street, "and this, before men were aware" into "a city's crowded thoroughfare" traversed daily by a hundred thou-

sand men just because a calf had first passed that way. Thus, possibly in frontier communities then and even now, roads have been made by chance.

Because the population of New England was more dense than in other sections of the country, attention was early turned to the roads. As early as 1639 Massachusetts directed its towns to build highways which connected with those of adjacent towns, and in time other colonies took similar action. The roads in general were very poor and followed Indian trails. Naturally freight charges were prohibitive save for articles of considerable value in small bulk, such as tea. To move a cord of wood 20 miles cost three dollars; the charge for carrying a barrel of flour 150 miles amounted to five dollars. Few bridges were constructed, for shallow rivers could be forded and large ones crossed by ferries. Because of the dangers and difficulties of travel some people did not get out of sight of the places where they were born, and many who travelled made their wills before beginning a journey of any length.

In 1654 land travel between Boston and Providence began over the Common Road, and about eighteen years later the Shore Road gave monthly mail service with New York. All the colonies early developed postal service. In 1720 weekly trips were made between New York and Philadelphia. Benjamin Franklin, made deputy-postmaster general in 1754, organized the mail service, reduced the New York-Philadelphia time from seventy-two to thirty-six hours, and increased the frequency of service from one to three times a week in summer and two in winter. One of the first regular stage-coach lines was opened between New York and Philadelphia about 1750, but the trip required three days. Southern points, such as Savannah and Charleston, obtained connection with such northern points as Baltimore and Philadelphia, though regular stage-coach connection did not begin until after the Revolution. When General Braddock left Alexandria for his ill-fated expedition against Fort Duquesne in 1755, his men were compelled to cut a road through the wilderness, and three years later when General John Forbes advanced from Philadel-

phia to the same post, his men did likewise. The sedate and careful Peter Kalm, a Swedish observer, who was writing about 1748 in reference to New Jersey roads in particular, said:

> The roads are good or bad according to the difference of the ground. In a sandy soil the roads are dry and good; but in a clayey one they are bad. The people here are likewise very careless in mending them. If a rivulet be not very great, they do not make a bridge over it; and travellers may do as well as they can to get over: Therefore many people are in danger of being drowned in such places, where the water is risen by a heavy rain. When a tree falls across the road, it is seldom cut off, to keep the road clear, but the people go round it. This they can easily do, since the ground is very even, and without stones; has no underwood or shrubs and the trees on it stand much asunder. Hence the roads here have so many bendings.[1]

Turnpikes.—One of the few beneficial effects of the Revolutionary War, other than the winning of independence, was the revelation concerning the need of passable roads. To meet this demand various states chartered companies to build turnpikes. The first turnpike of any importance was the Philadelphia-Lancaster road, whose builders received their charter in 1792. The charter of this company was fairly typical; it allowed a charge of one-eighth of a dollar for each ten miles for twenty sheep or hogs, one-fourth of a dollar for twenty cattle, one-sixteenth of a dollar for a horse and rider, one-fourth of a dollar for a two-horse wagon, and varying amounts, dependent upon the width of the wheels and number of horses, for other vehicles. Because of the profits of this turnpike company, numerous similar ones, especially in the New England and Middle Atlantic States, were constructed and some improved roads were built. Private turnpikes persisted in Pennsylvania as late as fifteen years ago. Even yet in some parts of the country an occasional turnpike company is found, but in general the roads were bought by state or local governments.

Early Stage-Coaches.—According to F. A. Michaux, who

[1] *Travels* [London, 1792] Vol. I, 330.

probably places the date too late, the Philadelphia stagecoaches did not go further south than Petersburg, Virginia, until 1802, when connection was made with Charleston, South Carolina, which in turn had connection with Savannah, Georgia. Inasmuch as Philadelphia had connection with New York and other northern points, practically all of the cities had regular stage coach connection by the beginning of the nineteenth century, but the roads were generally abominable, the fares high, and the conveyances bad. John Lambert describes a wagon in use on a road between Skenesborough and Troy, New York, as "a long narrow cart upon four wheels" "drawn by two horses abreast," and since the wagons of the period had no springs, the traveller, according to Lambert, needed "excellent nerves to endure the shaking and jolting of such a vehicle over bad roads." Margaret Van Horn Dwight in 1810 described a New Jersey road as "the worst road you can imagine over mountains and thro' vallies," "some part of it so intolerably bad on every account, so rocky and so gullied, as to be almost impassable."

Government Aid.—During this period the national government constructed roads in the territories, but the strict constructionist views of Madison, Monroe, and later of Jackson, who followed the liberal John Quincy Adams, prevented much construction at government expense. Vetoes in general were based on the ground that government aid for internal improvements was unconstitutional unless for the territories or for the general benefit. Such was Jackson's attitude in vetoing a measure whereby the United States was to subscribe $150,000 on condition that private individuals subscribed a similar amount to the Maysville Turnpike Company, which planned to construct a road from Zanesville on the Ohio to Florence, Alabama, on the Tennessee.

Possibly the first government aid was given to Ebenezer Zane in 1796 for the construction of a road from Wheeling, Virginia, to Maysville, Kentucky. The legislation which authorized the admission of Ohio, April 30, 1802, provided that one-twentieth of the money Congress received from

the sales of public land in Ohio should be used to construct roads "from the navigable waters emptying into the Atlantic to the Ohio River on condition that the states through which the roads passed should consent." Three-fifths of the amount was to be used to construct roads within the state and the remainder for roads leading to Ohio. In 1806 Congress voted for a road from the headwaters of the Potomac River to Ohio in accordance with the Act of 1802 and this road was the favorite of Congress until dropped in 1836, because Alton and St. Louis disputed the point where it should cross the Mississippi. Important points on this road or its branches were Washington, Baltimore, Cumberland, Wheeling, Zanesville, Columbus, Indianapolis, Terre Haute, and Vandalia. Government expenditures by 1836 had amounted to nearly seven million dollars. The years, 1826-1840, the chief period of government aid, saw an expenditure of more than ten million dollars for roads and canals, much of which went to the Cumberland Road.

Character of Roads, 1820-1860.—In the forty years prior to the Civil War roads were generally clay, gravel, charcoal, or plank. Gravel was used in river districts when material was available. In marshy forests charcoal roads were often used. Timber six to eighteen inches thick and twenty-four feet long was cut and piled lengthwise to a height of ten or twelve feet, after which it was covered with earth taken from the ditches and then charred. The coal was then raked out to a width of ten feet and a depth of two in the middle and one at the sides. The cost was in the neighborhood of $660 a mile, or about half that of the plank roads which generally cost about $1,250 a mile. Plank roads at one time were great favorites and a few still exist, but in general they were quickly removed as public nuisances. Charles Dickens in *Delights of Travel,* 1842, referred to the tilting of loose planks in these board roads, and anyone who has walked with a heavy companion on an old board walk can imagine some of the inconveniences.

The macadam road, named after the Scotch engineer

who developed the plan, was introduced into this country about 1820, but not generally developed until later. Macadam removed the dirt to a depth of fourteen inches, threw coarse cracked stones into the excavation to a depth of seven inches and then stones of greater fineness until the whole was covered with stone crushed to dust and rolled smooth. Like his contemporary, Telford, who employed a pitched formation, Macadam insisted on careful drainage and the use of well-prepared materials. In the South, however, many of the roads were made of the same size rock all the way through with a top dressing of dirt. The ordinary dirt road, by far the most common then and even yet, was a veritable mudpool in rainy weather and a dust bed, if widely used, in dry weather. Peter Cartwright's story of the deep mud hole in a quarter-mile stretch of mud in a road near Springfield, Illinois, in 1830, was not overdrawn.[2] Nor were the sprightly utterances of Frances Anne Butler, an English actress, concerning travel in New Jersey, 1832-1833, entirely devoid of foundation:

> . . . Oh, these coaches! English eye hath not seen, English ear hath not heard, nor hath it entered into the hearts of Englishmen to conceive the surpassing clumsiness and wretchedness of these leathern inconveniences. They are shaped something like boats, the sides being merely leathern pieces, removable at pleasure, but which, in bad weather, are buttoned down to protect the inmates from the wet. There are three seats in this machine; the middle one, having a moveable leathern strap, by way of a dossier, runs between the carriage doors, and lifts away, to permit the egress and ingress of the occupants of the other seats. . . . Away walloped the four horses, trotting with their front, and galloping with their hind legs; and away went we after them, bumping, thumping, jumping, jolting, shaking, tossing and tumbling, over the wickedest road, I do think, the cruellest, hard-heartedest road, that ever wheel rumbled upon. Through bog and marsh, and ruts, wider and deeper than any christian ruts I ever saw, with the roots of trees protruding across our path, their boughs every now and then giving us an affectionate scratch through the windows; and, more than once, a half-demolished trunk or stump lying in the middle of the road lifting us up, and

[2] See *Autobiography* [New York, 1856] 312-316.

letting us down again, with most awful variations of our poor coach body from its natural position. Bones of me: What a road! Even my father's solid proportions could not keep their level, but were jerked up to the roof and down again every three minutes. . . .[3]

Charles Augustus Murray in a trip from Fredericksburg to Richmond in 1835 declared that the regularly scheduled time for the distance of sixty or seventy miles was twelve hours. He referred to meeting the Richmond stage which contained passengers with blood-stained napkins tied around their heads, but he and his fellow passengers congratulated themselves because they had upset twice and had not yet needed bandages. After describing the joltings, the expressions of his fellow passengers, and the alarm and misery of all, he concluded:

> We arrived only four or five hours after the time appointed. and I felt nearly as much relieved as when my foot first touched the shore of Fayal. The description here given of this road is not overdrawn. I will defy pen, pencil, or malice to do it; and it must be remembered, that it is the great highroad [1835] from the Capital of Virginia to the seat of the Federal Government.[4]

Better Roads.—With developing population, roads naturally improved, but even yet travellers in rural districts tell of roads that match those of pre-Civil War times. Local government units, the state, and the national government now aid in road construction. Taxes on gasoline are being increasingly applied to this purpose. In 1904 state funds for public roads amounted to little more than $2,500,000, but in 1919 to nearly $107,000,000, while total expenditures during the same period increased from $59,527,170 to $389,455,932. Now a billion dollars are expended annually on the public roads, which have a mileage of about three millions. In 1916, the government appropriated $75,000,000 to be distributed among the states which would match the government money and, in 1921,

[3] *Journal,* Vol. I, 130-132; reprinted in Hart, A. B. *American History Told by Contemporaries* [The Macmillan Company, New York, 1906] Vol. III, 564, 565.

[4] *North America* [New York, 1839] Vol. I, 156.

it provided for the Federal Aid Highway System of about 170,000 miles, approximately a fourth of which has already been constructed. The use of the buggy, the development

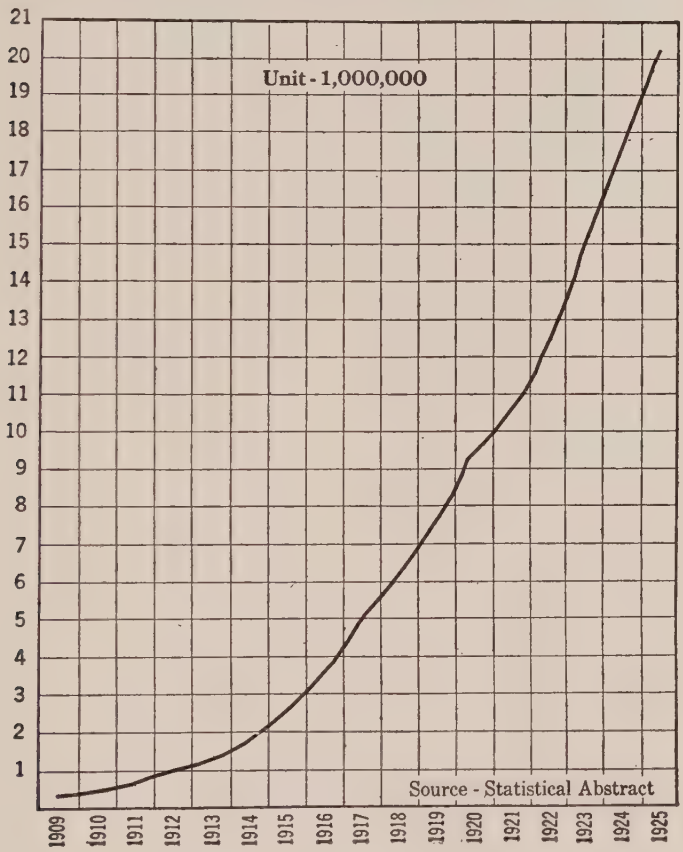

CHART NO. 74. MOTOR VEHICLE REGISTRATION.

of the bicycle, and the launching of the "Good Roads Movement" by the National Good Roads Association in 1890, and especially the automobile, aided in the improvement of the roads. Four hundred thousand miles of highway are now surfaced. According to the National Geo-

graphic Society, motorists can drive for three years and sixteen days over good roads at the rate of 360 miles a day without seeing the same milepost twice.

Automobiles.—Although a steam carriage was dreamed of by Newton as early as 1680 and constructed by Nathan Reed as early as 1790, the development of the automobile did not begin until the close of the nineteenth century. France and Germany made a start while our manufacturers were thinking of bicycles. But development came more rapidly after James B. Sheldon of Rochester, New York, patented his internal combustion engine. One of the first cars was produced by R. E. Olds before he was thirty. According to tradition, Henry Ford, the Dodges, Couzens, Leland, the Fishers, Durant, and other famous manufacturers had a hand in producing that car. Most of the early manufacturers catered to the rich, but Henry Ford decided that he would bring the car, as Henry Schott says in the March, 1926, number of *Nation's Business*, "to the people who lived in the two-story frame house and who might use the family horse in business during the day and take the folks for a ride on Sunday." And he did. Cars are now produced at the rate of four million a year and the total registration for all motor vehicles in 1926 was over twenty million. The increasing use of the automobile, whether for pleasure or business, led to the movement already described for improved roads, and to a marked growth of various manufactures, notably rubber, which had a value of $1,255,414,000 in 1925. (See chart, p. 417.)

Early Railroads.—As early as 1803 an iron tramway in England was open to the public, provided tolls were paid. Various individuals were experimenting with steam as a motive power, and in 1814 George Stephenson constructed a locomotive which drew thirty tons of coal at a speed of four miles an hour. Seven years later Parliament authorized the Stockton and Darlington Road, and in 1823, on Stephenson's advice, the use of steam power. Two years later the road was open, but the Liverpool-Manchester line, thirty miles in length, and opened in 1830, revolutionized industry, for it was the first road intended to carry pas-

sengers. One of its locomotives, the *Rocket,* attained a speed of twenty-nine miles an hour.

In the United States, too, men were thinking of steam power as a means of locomotion. John Fitch built a model locomotive and Oliver Evans placed wheels under a steamboat in 1804 and ran it over the streets of Philadelphia. John Stevens sought help from Congress. But Congress turned a deaf ear to his plans. The Quincy-Neponset Road was constructed in 1826 to carry stone to Bunker Hill Monument and the Mauch Chunk Road in the coal region of Pennsylvania was finished the next year. The cars of the latter, carrying the horses which were to pull the empty coal wagons back, descended by their own gravity. The first important railroad was the Baltimore and Ohio begun in 1828. The directors of that road, dissatisfied with horse and sail power, sought better methods. Horses had been used to pull cars and experiments had been attempted by which a horse in the car trod on apparatus to force the car forward. In the attempt to use wind a mast with a large sail was placed in the middle of the car. If the wind came from the right direction and was sufficiently strong the car moved forward. But horse power and sail power both lacked speed and dependability. One of the pioneers on the Baltimore and Ohio was Peter Cooper. That road was being built with the idea that it would be a horse power road. Many individuals believed that the curves were too numerous and sharp for steam power. But Cooper built the *Tom Thumb,* which, in 1829, proved that curves could be "navigated." By a prize of four thousand dollars for a successful steam locomotive the directors obtained one made by Phineas Davis, which drew fifteen tons at a speed of fifteen miles an hour. The Charleston-Hamburg Road, under Horatio Allen, was the first railroad to adopt formally the steam locomotive, January 14, 1830. On that road, too, the first American locomotive, the *Best Friend of Charleston,* exploded. The negro fireman, annoyed by the escaping steam, sat on the safety valve once too often. The *Charleston Courier* closed its account of the accident thus: "None of the passengers are danger-

ously injured except the negro who had his thigh broken." The next locomotive, the *West Point,* was made foolproof by placing the safety valve beyond the reach of the fireman. The New York Central dates back to a charter granted to the Mohawk and Hudson Company in 1826. Its first locomotive was demonstrated on August 9, 1831, over a road seventeen miles long. The engine was twelve feet long. It had large wheels, a tall smokestack, and a steam dome in the center. "Back of it," says Professor G. R. Chatburn, "were the tender and wood for fuel and two barrels of water, two passenger coaches modeled after stage-coaches, and following these several small flat cars to which had been attached temporary benches for seats."[5] Strong chains connected the locomotive and the cars. The motion was so jerky that the passengers fell from the seats every time the train started or stopped. To prevent this continued humiliation they carried rails from the near-by fences and made braces to keep the cars apart. Another inconvenience came from the sparks of the wood fuel which set fire to the passengers' clothing. Engines were early imported from England, and with the ones made by such local inventors as Stevens, Cooper, Davis, and Baldwin, soon came into common use.

Early roads were short; for instance, the Charleston-Hamburg Road, South Carolina, opened in 1833 with a length of 136 miles, was the longest in the country, and as late as 1860 no road had a length of a thousand miles. However, mileage developed rapidly and many important connections were made. According to the *Statistical Abstract,* total mileage increased from 23 in 1830 to 2,818 in 1840, to 9,021 in 1850 and to 30,626 in 1860; over a fourth of the latter was in the eleven states which afterwards formed the Southern Confederacy. The estimated cost of construction for all roads was little less than $250,000,000. By 1841 Boston secured connection with Albany. Other important connections were: Lake Erie and the Ohio in 1848, New York and Boston in 1849, New York and Lake

[5] *Highways and Highway Transportation* [Thomas Y. Crowell Company, New York, 1923] 104.

Erie in 1851, New York and Chicago in 1853; and Lake Michigan and the Mississippi in 1850 and 1854, the Ohio in 1854, and the Missouri in 1859. By 1860 railroads from Lakes Erie and Michigan touched the Mississippi at ten and the Ohio at eight different points, and it was possible for a man using nineteen independent roads to travel from Bangor, Maine, to New Orleans, a distance of 1,953 miles of continuous track, except for ferries over the Hudson, Susquehanna, Potomac, and James rivers. The time required, with the best of connections, was three days.

The development of proper motive power, already noted, was not the only difficulty encountered by early railroads; another related to roadbeds. Tracks had to be carried over creeks and through marshy ground, and satisfactory rails needed to be developed. Rails made of stone and covered with iron strips were tried, but they lacked elasticity. Iron strips were then fastened to wooden rails, but they often broke loose and cut through the bottom of the car to the fright, injury, or death of the occupants. Another difficulty was the opposition of vested interests, such as the stage-coach owners, the turnpike companies, and the canals, which feared that their business would be injured. A writer in a Providence paper, possibly in ridicule of Rhode Island roads, but, nevertheless, in accord with the belief of many people declared:

> Only *one* English engine alone costs $2,000, which sum the whole of our apparatus does not much exceed, as figures will prove; for 700 good chestnut rails at $3, amounts to only $21, and it ought to be remembered that this is *all* the expense we are at, and the inference is conclusive in our favor. We place our rails fifty to the mile by the side of the road, to pry out the wheels when they get stuck, and hoist behind when wanted.[6]

The most marked opposition came from the canal companies, and it should be remembered that most of the early railroads were built as feeders to canals and rivers. This opposition was shown to the Baltimore and Ohio Road by the Chesapeake and Ohio Canal, but perhaps its most vio-

[6] *Eighty Years' Progress*, Vol. I, 192.

lent revelation was in the case of the Erie Canal interests in hampering the railroads of New York. According to Thomas P. Kettell, the New York Central was long required by a legislature subordinate to canal interests to charge in addition to the regular rates the tolls that would have been required had the goods gone by canal.

Growth Since 1860.—Railroad construction was naturally retarded during the Civil War and for the five years ending in 1865 little more than 4,500 miles of track were laid, practically all of which was in the North and West. After that, however, construction until the close of the century was rapid. Mileage amounted to 52,922 in 1870, nearly doubled in each of the following decades, and stood at 198,964 in 1900. Growth, in fact, was so rapid as to be a factor in the panics of 1873, 1884, and 1893.

This period saw the development of transcontinental roads. As early as 1834 talk of an Atlantic to Pacific connection began and after the discovery of gold in California and its admission as a state in 1850, the demand became insistent, but Northerners and Southerners with growing animosity could not agree as to the eastern terminal point. When the South withdrew, a point in the North could be taken. Political and military necessities emphasized the immediate need. Accordingly, Congress decided to aid in construction and chartered two companies, the Union Pacific, which built from Omaha to Ogden, and the Central Pacific, which built east from Sacramento to connect with the Union Pacific. The two roads met at Promontory Point, near Ogden, Utah, May 10, 1869. This line with the others that followed, such as the Northern Pacific, the Atlantic and Pacific, the Southern Pacific, the Santa Fé, and the Great Northern, helped bind the West to the East, promoted commerce and industry generally, and encouraged the settlement of the intervening territory. The national government and the states gave aid. The Union Pacific received 12,000,000 acres and the Central Pacific 8,000,000. In the period, 1850-1871, according to Professor E. L. Bogart, the Federal government placed over 159,000,000 acres to the credit of railroad corpora-

tions, and the state governments added about 55,000,000 more which had been granted them for that purpose. Public funds were occasionally lent to the roads; thus, the Union Pacific and Central Pacific received from $27,000,000 to $28,000,000 each.

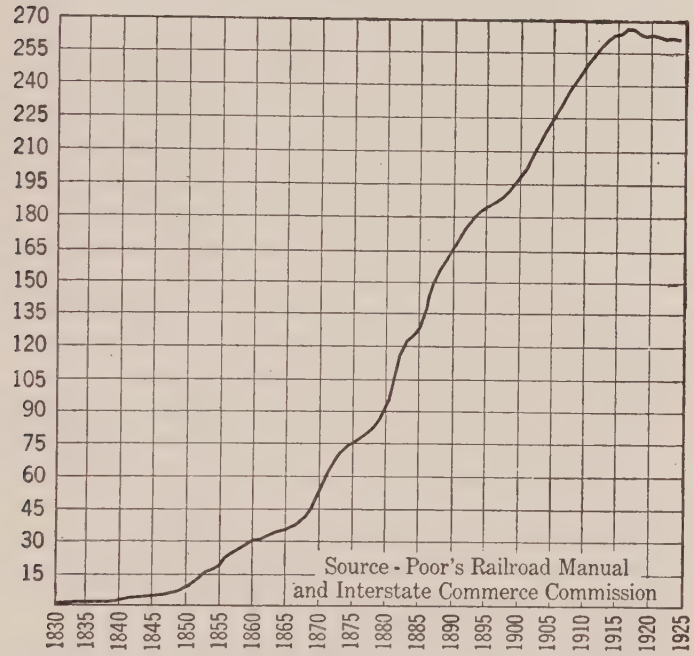

Chart No. 75. Railroad Mileage, Calendar Years, Except 1890-1916, Which Are Fiscal.

North and south lines and local lines developed during this period and roads increased in length. In 1867 only one road in the country had a mileage of over a thousand and it had about seven per cent of the total, but in 1900 more than sixty per cent of the railroad mileage of the country was in systems of over a thousand miles and the movement has since continued. By 1906, the country was practically consolidated into great groups with a mileage

usually running from ten thousand to twenty-two thousand: Rockefeller, Moore, Harriman, Gould, Pennsylvania,

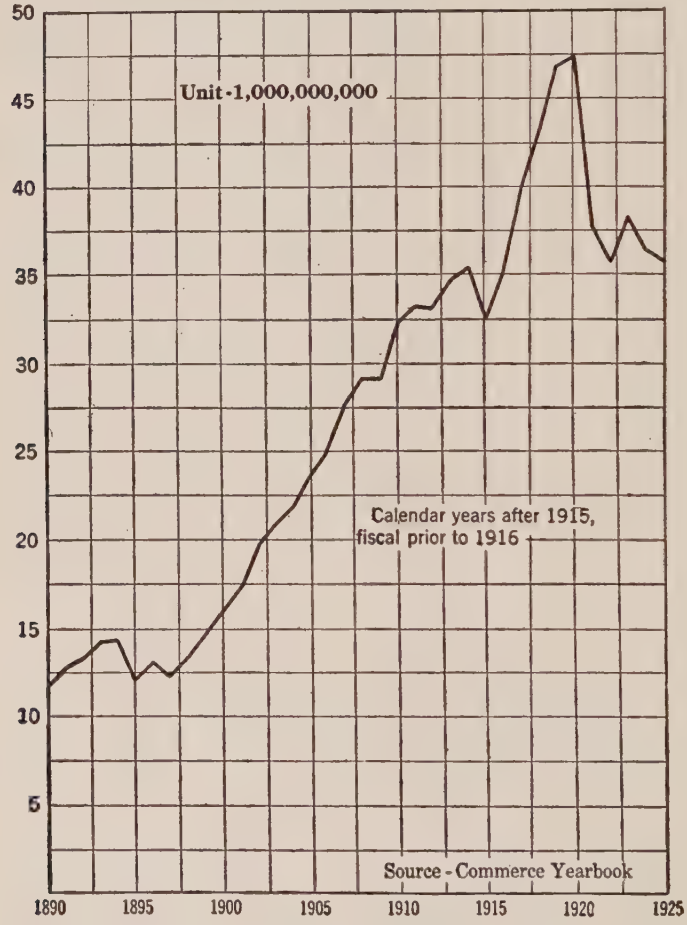

Chart No. 76. Passengers Carried One Mile.

Morgan, Hill, and Vanderbilt. Since 1893, railroad construction has slowed down, chiefly because of the completion of needed lines, adverse legislation, and lack of profit. In 1910 the mileage, however, was 249,992, and at the high

point in 1917, 266,059. In a few subsequent years mileage actually declined, but a slight increase may be looked for, because recent years have seen the greatest freight movement in history and the earnings of five or more per cent have been the highest in several years. Passenger traffic, however, has declined somewhat on certain roads because of the development of automobiles and good roads.

Improvements in Service.—Since the Civil War marked improvements have occurred in the service. Steel rails began to take the place of wrought iron, the modern T rail coming into use. In 1864 George Pullman built his first sleeper and four years later George Westinghouse successfully demonstrated his air brake, though he did not get the automatic brake until 1872. The Janney automatic safety coupler was another invention of the period. Better time was made, more regular service was given, and a standard gauge of four feet, eight and a half inches, generally adopted, did away with the necessity for the numerous transfers common prior to the Civil War. By 1887 Westinghouse had perfected his quick action air brake. Travelling became safer and more comfortable through the adoption of vestibuled passenger cars, block signalling, and interlocking switches and signals. Coal cars with dumping contrivances, tank cars for oils and acids, and live stock, refrigerator, and heater cars came into use. Weights of locomotives and cars increased through the use of heavy steel rails. Now locomotives of fifty or more tons are common, and steel cars capable of carrying sixty, seventy-five, or more tons of coal are generally used. Steel is now commonly employed for wood in passenger cars. Methods of heating and lighting are better, as are automatic safety couplers, air brakes, and other devices. Automatic block signals on main line tracks and interlocking plants at crossings and terminals are now general. A more recent movement is the substitution of electric power for steam power because of its greater economy. The Grand Central and the Pennsylvania stations at New York have underground electrified track, and electric suburban service has been installed by steam roads in New York, Phila-

delphia, and other cities. Some roads, such as the Chicago, Milwaukee, and St. Paul and the Norfolk and Western Railroad have electrified their mountain service, and other roads are beginning electrification.

Railroad Abuses.—There were numerous abuses connected with the railroad business. One of the most notorious was the Credit Mobilier in which some of the directors of the Union Pacific formed a construction company and

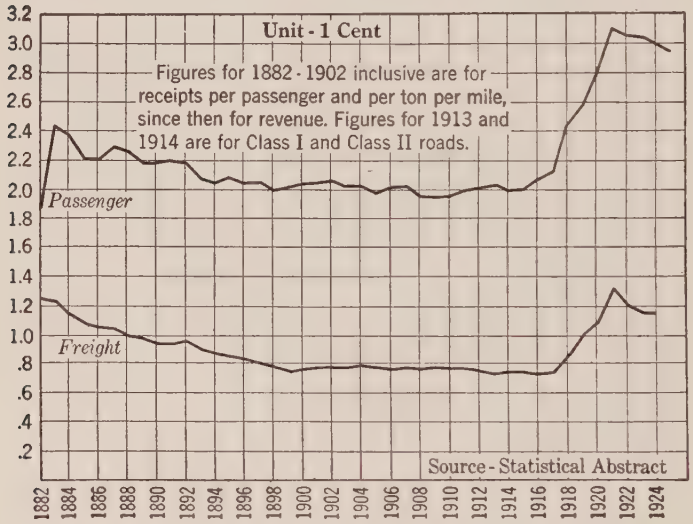

Chart No. 77. Railway Rates.

in their capacity as directors voted themselves unduly large profits as constructors. Stock was distributed among members of Congress at low figures and several prominent men were tainted. Other scandals of construction developed, and railroad interests corrupted executive, legislative, and judicial officers. Jay Gould and his associates, for instance, wrecked the Erie Railroad and corrupted the New York judiciary. After the losses in the rate war, when the first-class freight rate from Chicago fell from about two dollars a hundred pounds to about forty cents in Feb-

ruary, 1869, and continued low for a while, pooling developed. According to this arrangement earnings were divided among the railroads irrespective of who carried the goods in such a way as to stop the cutthroat competition. Discriminations among commodities, localities, and persons were tried. For instance, at one time, such a low rate was given on wheat in comparison with flour that the Minneapolis millers could not produce flour for export. In order to obtain the traffic at competitive points or build up communities where they owned property, railroads gave some localities lower rates than others. The worst form of discrimination, however, was among persons. The railroad officials believed that they could get the traffic as well and keep the secret longer if they gave one live shipper a concession, say of a fourth or a half cent a bushel on grain, than if a half dozen were given the rate. From this point of view fixed charges had to be met; the railroad officials could not calculate the cost of carrying extra freight or passengers and if they kept their other trade the extra traffic would be profitable no matter how low the rate. Generally big business, as previously noted, profited from low rates, but farmers were injured.

Government Regulation.—Opposition to the railroads was at first negligible in the newer states where the need for transportation facilities was paramount, but in the late sixties and following, because of high rates and low prices for agricultural products, the regulation of railroads began. Illinois took the lead in 1870 by appointing a commission whose duty it was to set maximum rates, prohibit discriminations, and regulate railroads. Other states, such as Iowa, Wisconsin, Minnesota, Georgia, and California, followed her example. The "Granger" legislation, however, went too far, for according to the Constitution interstate commerce regulation is reserved to Congress. That body, by the Interstate Commerce Law of 1887, forbade pooling and unfair discrimination and required rates to be just, reasonable, public, and subject to change only on notice. An Interstate Commerce Commission was appointed to enforce the law. Railroads then formed rate agreements,

but in 1897 and 1898 the Supreme Court in the Trans-Missouri Freight Association and the Joint Traffic Association cases decided that the agreements violated the Sherman Anti-Trust Act of 1890. The Elkins Act of 1903 defined somewhat more clearly unfair discrimination and rebating and made provision for the speedier trial of railroads against which charges were brought. Because it failed to provide machinery for the reduction of high rates and did not apply to other discriminations than personal, the Hepburn Act of 1906 was enacted. It forbade the grant of free passes, refused railroads the right to carry their own products to market, improved the law against rebates, and placed express, sleeping car, and pipe line companies, and switching and terminal facilities, as well as the railroads, under the control of the commission, which was to "determine and prescribe what will be the just and reasonable rate." Because, however, the final control over rates was left with the courts, another step was taken by the Mann-Elkins Act of 1910, which deprived the carriers of the right to arbitrarily increase the rates to an unreasonably high level and leave them there until the courts ordered reductions. Under the new act the commission could suspend all proposed increases until it had determined their reasonableness. The phrase of the Act of 1887, under "substantially similar circumstances and conditions," had been weakened, for the Supreme Court had held that competition constituted dissimilar conditions and thus justified larger charges for short hauls in some cases. By dropping the phrase in 1910 larger charges for the short haul became illegal. The act created a commerce court which was charged with hearing appeals from the commission; this expert tribunal and reliever of circuit courts was, however, dropped in 1912. Government control by the Mann-Elkins Act was definitely applied to express, telegraph, telephone, and cable companies.

In 1910 and 1913 the railroads asked for rate increases which were refused, and when the World War began conditions were bad. In October, 1915, nearly forty-two thousand miles, or about a sixth of the total, were in the hands

of receivers. By proclamation of December 26, 1917, the president authorized control of the railroads and practically all systems of transportation except interurbans and street railways for war purposes. The Act of 1918 authorized the president to guarantee the railroads a just compensation, though not in excess of the average for the three years prior to June 30, 1917; returns above that amount were to go to the government. On July 22, 1918, the president authorized taking over the telegraph and telephone systems and placing them under the postmaster-general. Government operation of the railroads which was designed to help win the war, increase efficiency, and reduce the cost by coöperation came to an end February 29, 1920. By January, 1924, practically all claims growing out of government operation had been settled, and according to James C. Davis, Director General of Railroads, the total cost had amounted to about $1,696,000,000.

When the railroads were handed back to private ownership and management, they came under the provisions of the Transportation Act which had been approved the day before. This act legalized pools and gave the Interstate Commerce Commission the duty of making regional groupings, regulating capitalization, exercising general supervision, and naming minimum as well as maximum rates. The law defined five and a half or at most six per cent as a fair return from March 1, 1920 to March 1, 1922, and required the equal division with the government of any return above six per cent, a provision upheld by the Supreme Court early in 1924. When the two-year period expired, five and three-fourths per cent was set as a fair return. The act created two kinds of boards: boards of labor adjustment composed of employers and employees to settle other than wage questions, and a salaried Railroad Labor Board to settle wage matters, the latter consisting of three representatives of the employers, three of the employees, and three of the public. Although strikes are not forbidden and compulsory arbitration is not provided for, some pressure is brought to bear in behalf of peace. Wage reductions ordered in 1922 caused the big strike of

that year, but several increases were made the next year. The Watson-Parker Bill of 1926, offered at the joint request of the railroad brotherhoods and a group of railroad officials, abolished the Railroad Labor Board, but provided for arbitration without public representatives. Disputes are considered by the two parties and if necessary by a board of adjustment, a board of arbitration, the president's mediation board of five, and an emergency board. Much time may thus be consumed to little effect, Franklin Snow remarks in *Commerce and Finance,* February 17, 1926.

Express Business.—The express business developed slightly prior to the Civil War and to a marked extent in the subsequent period. In 1839 W. F. Harnden began the practice of carrying small packages from Boston to New York in a valise, but he soon contracted with a railroad to carry his goods. Within a few years Adams and Wells had entered the business, and the gold fever of 1849 sufficed to bring California into the system. By 1850 about twenty thousand miles of express line were in operation and within ten years the number had practically doubled. Development continued rapidly after the Civil War, but in the twentieth century the express companies of which Wells, Fargo, and Company, American, Adams, and the Southern were the most important, began to feel the competition of parcel post. During the war the companies were consolidated. The American Express Company which, on December 31, 1918, operated about 287,819 miles of line, has practically all of the business. Its main competitor is the Southeastern Express Company formed by the Southern Railway and the Mobile and Ohio in 1920. The mileage for the two companies in 1925 was 251,814 and 10,519 respectively.

Interurbans.—In the period, 1851-1860, city railroads developed rapidly and by 1860 slightly more than four hundred miles had been constructed at a cost of nearly fifteen million dollars. The leaders were Philadelphia, Brooklyn, Boston, New York, St. Louis, Cincinnati, and Hoboken with a mileage ranging from 148 to two. These early companies competed with horses, as in the case of

railroads, but they soon won the victory, only to fall before the developing interurbans and electric railways, the first practical exposition of which came in Kansas City in 1884. Now the railroads must meet the competition of nearly forty-five thousand miles of interurban lines which enjoy certain advantages over steam lines: more frequent service, frequent stops with comparatively high speed, lower fares, and greater cleanliness. They promote trade and have a distinctly socializing effect on the country folk and, moreover, make it possible, as do the automobiles, for country people to enjoy the educational and religious advantages of the city.

River Transportation Facilities.—The rivers of the country were used in our earliest history for passenger and freight traffic. Up these waterways the people pushed into the interior of the country and on the wide rivers of the West all kinds of boats were found, among them barges, keel boats, ferry flats, pirogues, common skiffs, canoes, and dugouts. Even after the invention of the steamboat by Fulton in 1807 and his predecessors, such as Fitch, Rumsey, and Evans, and its introduction on the Ohio in 1811 and on the Mississippi River a few years later, a considerable flat boat traffic existed. Despite the successful introduction of steam for motive power, rates up stream were double those down stream, for a time. Boats increased materially in size and comforts prior to the Civil War and such travellers as Charles Dickens and Frances Anne Butler are far more complimentary to steamboat travel than to either stage coach or railroad.

Since the Civil War, traffic on the rivers has declined in a marked way, chiefly because of the competition of the railroads. Few river cities, unless also railroad centers, have increased much in population, and expenditures have not been sufficient to keep the rivers, especially the Mississippi, in good condition. Capital has proved shy of investment, and navigation obstacles such as swift currents, floods, varying depth of water, and ice have been handicaps. Few satisfactory loading and unloading devices have been used; wharves and docks have proved unsatis-

factory. Good natural landings are few and artificial ones are too costly for small places. Terminal facilities, moreover, have often been purchased by railroads, and chances for organization of the numerous steamboat owners are small. Again, the westward shift of production has injured river trade, for transshipment from railroads to boats is costly and often damaging. In the interest of conservation, however, a far greater use should be made of our waterways, and they should be coördinated with the railroads.

Canals.—Although George Washington had proposed a canal to connect Chesapeake Bay and the Ohio, and had predicted the connection of the Hudson River with Lake Erie prior to the Revolutionary War, and although Virginia had granted the James River Company a charter as early as 1785, little was done prior to 1817. In 1792 New York chartered the Western and Northern Inland Lock and Navigation Companies, and in 1793 Massachusetts authorized a canal to connect Boston with the Merrimac River. The Erie Canal, begun in 1817 and completed in 1825, was a monument to the courage and intelligence of DeWitt Clinton. The canal was 363 miles long, forty feet wide at the top, twenty-eight at the bottom, and four feet deep. The time from Buffalo to New York was reduced from twenty days to eight, and in a short while the cost of transporting a ton of freight declined from one hundred dollars to five dollars. New York's commercial and industrial supremacy was assured and other states caught the fever. Pennsylvania developed canals, especially in the anthracite region, and the Great Lakes were connected with the Ohio and Mississippi rivers through the Ohio, Indiana, Illinois, and Wisconsin canals. Numerous branch canals, too, were developed in New York.

After the Civil War a period of decline occurred. Even the Erie Canal, which had more than paid the seven odd million dollars in construction cost from tolls in the first ten years, showed a steady decrease in percentage of all freight from forty-four in 1868 to five thirty years later, though tolls had been abolished in 1882. In the period

of forty years ending in 1900 about seventeen hundred miles of canals were abandoned. The decline continued in the next century even though New York sought to improve her canal systems by bond issues of 1903, 1909, and 1916 of about $135,000,000 for the Erie, Champlain, Oswego, and Cayuga and Seneca canals. The Erie Barge Canal, deepened and improved, now has a length of about 340 miles, but the total tonnage on the Erie declined from little more than three and a third millions in 1900 to about a third that in 1918, and then rose to nearly two and two-thirds millions in 1925.

Other states—Pennsylvania, Delaware, Illinois, Washington, Missouri, Minnesota, Arkansas, and Texas—have spent money on the construction of canals within the last quarter of a century, a rather questionable policy because, though the short canal connecting two great bodies of water is indispensable, the wisdom of keeping up the long water routes in competition with the railroads and transportation by motor trucks, now steadily increasing because of better roads, is doubtful. The most important of the new canals are in Texas; the Trinity River Canal, 330.5 miles in length, opened in 1909, reaches from Dallas to White Rock Shoals, and the Brazos River Canal, opened six years later, extends from the mouth of the river to Waco, a distance of 424 miles. The Cape Cod Canal, predicted early in the seventeenth century and planned by Gallatin, had to wait for the twentieth century. It was begun in 1909 and completed five years later. It connects Buzzard's Bay with Cape Cod Bay, shortens the route from Boston to New York by about seventy miles, and affords much safer travel. In the same year the Houston Ship Canal gave Houston, Texas, better communication with the sea. The Beaumont and Port Arthur Ship Channel completed about the same time through joint efforts of the citizens of Jefferson County and the national government is in the greatest oil refining center of the world and handles much of the lumber of eastern Texas and western Louisiana as well as the sulphur of Louisiana. It was responsible for a trebling of Port Arthur's population, 1910 to 1920, and the han-

dling of exports worth over $113,000,000 in the latter year. The last three canals noted, of course, helped increase the coastwise trade, as the lake canals, especially the Sault Ste. Marie, had done for lake commerce.

The opening of the Panama Canal and the union of the Pacific and Atlantic, dreamed of by visionaries since the discovery of America and finally accomplished in 1914 at a cost of approximately $400,000,000, has shortened the distance from the Atlantic to the Pacific coasts, has brought

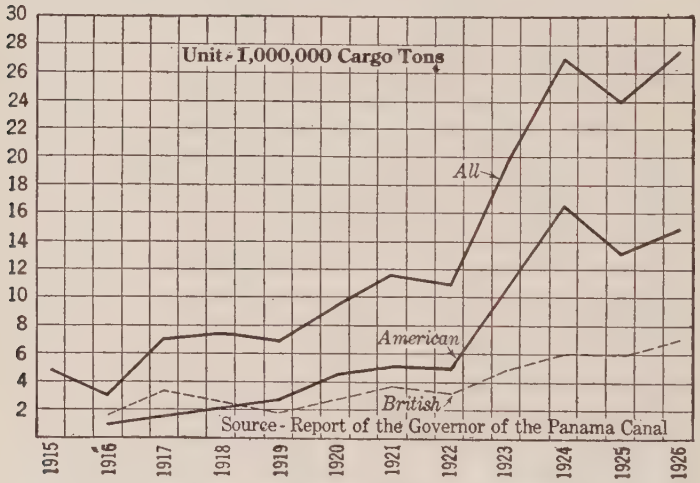

Chart No. 78. Panama Canal Traffic.

our eastern shore closer to Japan and the Orient, our western coast closer to Europe, and the eastern part of the United States closer to the western coast of South America. Savings in time and freight rates are effected other than those over the Cape Horn or Suez routes; for instance, the Mississippi with its now probable deep waterway has been brought into closer contact with the western coast of South America.

Conquest of the Air.—Man has for all practical purposes conquered the land and water for transportation purposes, and now he has virtually won the battle for control

of the air. In 1783 two men travelled two miles by balloon and the next year witnessed fifty-two balloon ascents. The first notable distance record was established by two Americans who travelled 1,150 miles at the rate of about a mile a minute in 1859. In 1884 Colonel Renard travelled twenty-three miles in a dirigible balloon driven by a motor screw, and twenty-six years later Count Zeppelin opened regular airship passenger service with the *Deutschland.* S. P. Langley was one of the pioneers in demonstrating the practicability of mechanical flight. At Allegheny he established an immense whirling table whose revolving arm could be driven at a speed of seventy miles an hour. After overcoming innumerable difficulties, on May 6, 1896, he launched an aerodrome weighing about thirty pounds, about sixteen feet in length, and with wings measuring about thirteen feet from tip to tip. On two occasions it sustained itself for a minute and a half in the air, or until its fuel and water were exhausted. It travelled more than a half mile in each case and then fell into the water, as desired to avoid breakage, when its engines stopped. In 1903 Langley experimented with an aerodrome large enough to carry a man, but frequent accidents and a lack of funds compelled him to abandon his experiments without loosening the machine in the air. In the meantime other men were experimenting with aircraft. In the very year that Langley died, 1906, Orville and Wilbur Wright flew 24.5 miles in an airplane, or machine heavier than air and driven by a motor. Since then numerous machines have been invented. And in them men have reached the North Pole, girdled the earth, carried mail, passengers, and freight, and waged war.

Long ago with prophetic hand Tennyson had written, and we hope that his last lines are coming true as well as the first:

For I dipt into the future, far as human eye could see,
Saw the Vision of the world, and all the wonder that would be;

Saw the heavens fill with commerce, argosies of magic sails,
Pilots of the purple twilight, dropping down with costly bales;

Heard the heavens fill with shouting, and there rained a ghastly dew
From the nations' airy navies grappling in the central blue;

Far along the world-wide whisper of the south-wind rushing warm,
With the standards of the peoples plunging thro' the thunder storm!

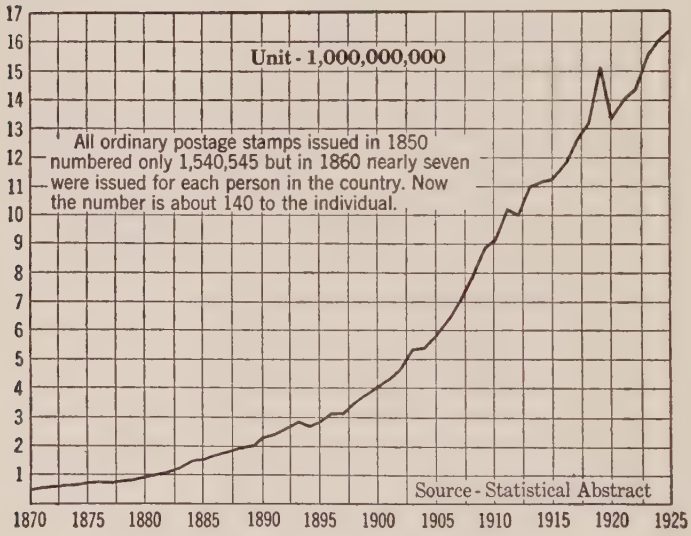

CHART NO. 79. POSTAGE STAMPS ISSUED.

Till the war-drum throbb'd no longer and the battle flags were furl'd
In the Parliament of man, the Federation of the World.

Post Office.—Only the briefest reference can be made to such methods of communication as the post office, telegraph, cable, wireless, telephone, photographs, movies, talking machines, and newspapers.

Reference has been made to the post roads developed in the colonial period. According to Thomas P. Kettell, the postal history of the country prior to 1860 falls into three

periods. In the first, from 1790 to 1810, common dirt roads and sail vessels were used; in the second, 1810-1830, the same methods were used, but canals and steamboats also became prominent; and in the third period, 1830-1860, railroads gained on other methods. An act of 1816 made the charge of carriage dependent upon the number of sheets and the distance carried. In 1845 charges were reduced and two years later postage stamps were employed, but not until 1850 was a flat rate for all letters irrespective of distance introduced, and not until 1863 was the postage lowered to three cents and somewhat later to two cents, the rate which has since prevailed except for a short period as the result of the World War. Delivery of mail by carriers began in 1863, the use of postal orders in 1864, sorting of mail *en route* in the same year, and toward the close of the century special delivery and rural free mail service. The introduction of rural routes caused a reduction of about a third from the 76,688 post offices of 1900, but naturally business has increased in a marked way. Now over a billion postcards and sixteen billion stamps are issued yearly, and the various kinds of mail probably total twenty-five billion pieces a year. The gross revenue of the post office department is well over a half billion dollars a year, and the expenditure is ordinarily somewhat more. Money orders issued have amounted to from a billion to a billion and a half dollars for several years. The development of the parcel post in recent decades has supplied competition for the express companies. (See chart, p. 436.)

Telegraph.—Although Cook patented an electro-magnetic telegraph in England in June, 1837, and Steinhil of Germany had a telegraph working between Munich and Bogenhausen in July of the same year, credit for a really working line goes to Samuel F. B. Morse, an American artist and writer, who began experimenting as early as 1832. After infinite discouragements, the happy news of a Congressional appropriation was carried to him by Anne Ellsworth, who was rewarded by being allowed to send the first message, "What hath God wrought?" The appropriation was made March 4, 1843, and the first line from Washing-

ton to Baltimore was opened in June of the next year. By 1860 the number of miles of line in the United States was over fifty thousand and the next year San Francisco came into the system. In 1872 the invention of duplex telegraphy gave a marked impetus to the industry and lessened the cost of service, for messages could be sent both ways at the same time. The miles of telegraph line now number about a quarter of a million and the offices about twenty-

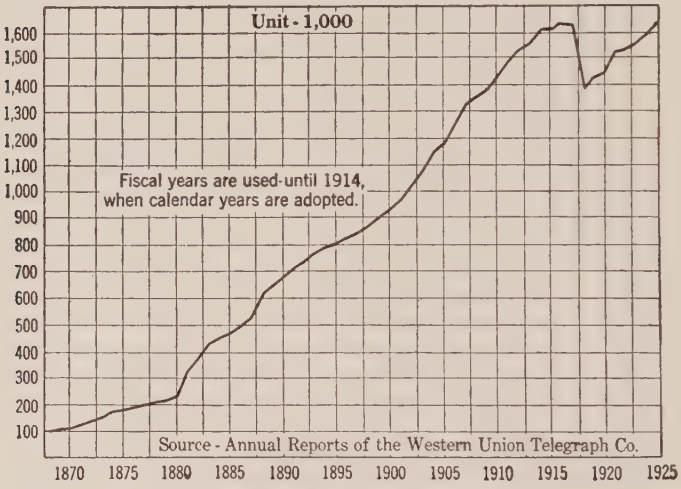

Chart No. 80. Miles of Western Union Telegraph Wire.

five thousand, or about ten times the number of 1865; the messages sent probably average about one and a half per year for every man, woman, and child in the country.

Cable and Wireless.—Closely related to the telegraph are the cable, wireless, and telephone. In 1858 Cyrus W. Field laid the first cable across the Atlantic, but it worked only a short time. Field, however, would not give up, and after thirteen years of work, the raising and spending of millions, and crossing the Atlantic more than forty times, he succeeded in laying the first commercially successful cable. Others, of course, followed. In 1896 Guglielmo

Marconi made the first successful application of electric-wave wireless telegraphy. Recent developments in this field have been facsimile-telegraphy and photo-telegraphy; telautography was applied in connection with the wireless system from 1898 to 1909. The wireless has affected the telegraph and cable business, for it is not subject to such risks and losses as the cutting and breaking of wires. Radio outfits are now used by school boys, but they are also widely employed for pleasure and for business. Radio apparatus produced in 1925 was worth $177,000,000.

The Telephone.—About 1875, two professors, Gray and Bell, working independently, invented the telephone, but credit usually goes to the latter. On March 10, 1876, Bell and Watson were working in different rooms of a house in Boston, each with an experimental phone. Bell spoke into his instrument: "Mr. Watson, please come here. I want you." A minute later an excited man broke into Bell's room. But others, too, were aghast. To a prominent lawyer, Watson said over the phone: "How do you do?" When that individual finally realized that he was expected to say something, the best he could do, according to F. S. Tisdale, was to shout: "Rig-a-jig-jig and away we go." Even employees and inventors had little faith in the telephone's possibilities, though they waited until a little old Boston lady in black taffeta had left the exchange before they laughed at her request to be connected with her son in Chicago.[7]

The Bell patents offered to the Western Union Telegraph Company for $100,000 were rejected, but later, when the patents were unavailable, that company would have paid $25,000,000. The Western Union then employed Thomas A. Edison to design a telephone, but the Bell people won suits for patent infringement. Theodore N. Vail, perhaps, first saw the telephone's possibilities. He it was who bought control of the Western Union for the American Telephone and Telegraph Company, but official Washington questioned a monopoly of communication and the holdings were relinquished in 1915. Vail, too, gave the order

[7] See *Nation's Business*, July, 1926.

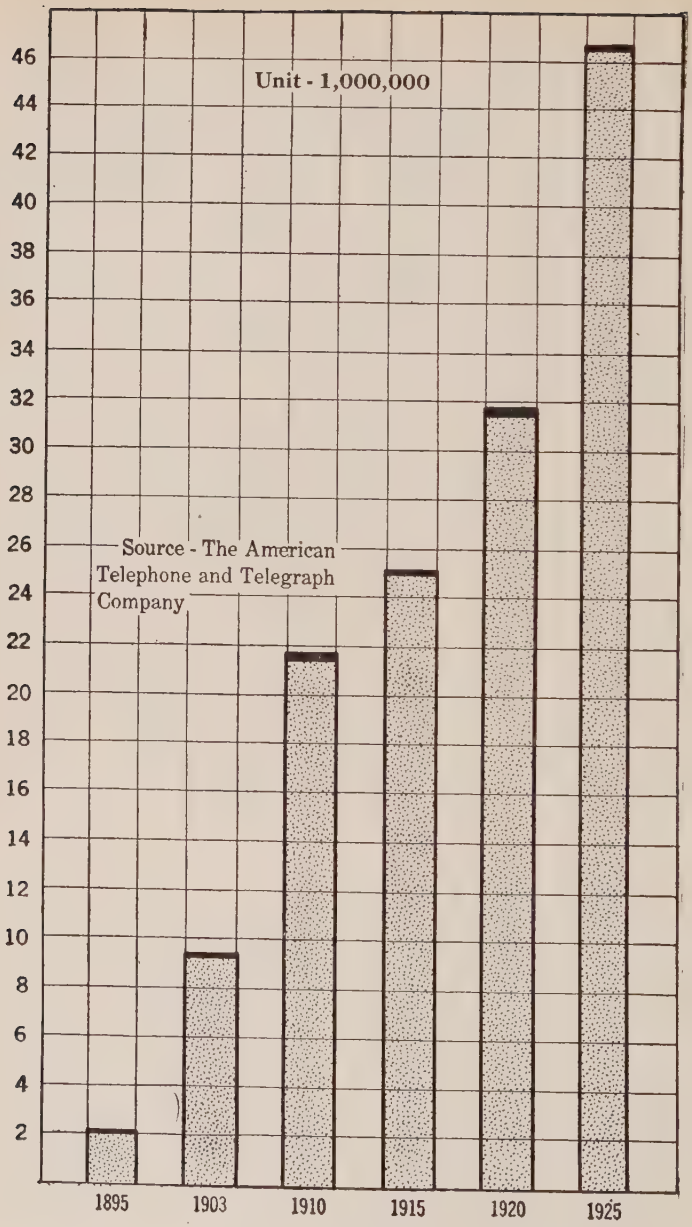

CHART NO. 81. DAILY BELL TELEPHONE EXCHANGE MESSAGES.

to his astonished engineers after heavy damage from a blizzard: "Get those wires underground."

When the Bell patents began to expire in 1894 and 1895, independent exchanges were started all over the country. By 1900 there was one telephone to every forty people in the country, but now the proportion is about one to five. Of the 52,200,000 miles of wire in the country, 45,473,540 are Bell owned, 6,426,460 are wires of connecting companies, and the remainder belong to small concerns which do not connect. The Bell equipment is worth more than $2,500,000,000, the income is over $100,000,000 a year, the employees nearly 300,000, and the stockholders 362,179, or enough to people a city the size of Indianapolis. Bell messages in recent years have averaged from thirty to fifty millions daily, the number having increased about half, 1920-1925. In 1922 the total number of messages was estimated at 24,738,758,739, or over 67,000,000 a day.

Other Improvements.—Photography really began with the investigations of K. W. Scheele in 1777, but Thomas Wedgwood produced the first real photograph in 1802, and the daguerreotype, named after its inventor, was perfected in 1839. Dry plates appeared in 1862 and the first kodak using films in 1888. Frederick E. Ives of Philadelphia produced the three-color process of color-photography, through the combination of red, green, and blue, in 1878. Lithography, begun in 1798, became an important trade at Munich by 1806. In 1861 Coleman Sellers of Philadelphia patented the "kinematoscope," or motion picture machine, and four years earlier, Leon Scott furnished the precursor of the phonograph, though Thomas A. Edison, with a device patented in 1877, was the first to succeed in reproducing the vibration of sounds on moving surfaces. The graphophone was patented in 1885 and the gramophone two years later. The vitaphone is now coming into use.

Newspapers deserve brief mention. It was certainly a long step from the little papers of the colonial days, such as the Boston *News Letter,* 1704, to the big papers and magazines of the present day, such as the Chicago *Daily Tribune,* the New York *Times,* and the Boston *Transcript.*

A very conservative estimate would place the average circulation of all papers and magazines at more than a billion a month, of which five-sixths, or more, represent dailies, and the worth of the advertising at a billion dollars per annum. In 1925 about twenty-one thousand papers, two-thirds weeklies, were published in the United States.

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CHAPTER XVI

DOMESTIC COMMERCE

Colonial Coastwise Commerce.—In this chapter we shall consider briefly certain outstanding aspects of internal commerce, namely, the coastwise trade, lake traffic, river trade, canal commerce, railroad traffic, certain phases of retailing, and value of the total trade.

The coastwise commerce began soon after the settlement of the colonies. In 1631 the *Blessing of the Bay* was built at Plymouth to trade with other colonies, and in the same year a vessel from Virginia traded corn and tobacco for fish. The New England Colonies, New York, and later Pennsylvania well-nigh monopolized the coastwise trade, for they had no staple products to export to England. Moreover, the fisheries encouraged shipbuilding and together with rum manufacture and small-scale agriculture favored the growth of ports. Thus, helped by cheap ships, lack of external competition, and well-situated markets, northern traders almost monopolized the British intercolonial trade. On the other hand, the important southern staples, such as tobacco and rice, were demanded in England, and the British merchants sent the necessary ships for transportation.

Among the various products which entered the coasting trade were bread, flour, rum, cider, butter, cheese, candles, sugar, soap, wooden vessels, pleasure carriages, iron goods of various sorts, brick, leather goods, paper, cordage, woolen goods, and hats. It is impossible to estimate accurately the value of the colonial coastwise traffic, but in the period shortly prior to the Revolutionary War it employed from 165,000 to 170,000 tons for the thirteen colonies and, if we add Newfoundland, Canada, Nova Scotia, Florida, Ber-

muda, and the Bahamas, 191,000 tons or more. It consequently ranked among the leading branches of colonial commerce, though it was less valuable than either the trade with Great Britain or the West Indies.

Coastwise Commerce, 1775-1815.—The Revolutionary War almost annihilated the coastwise trade, as well as other branches of commerce. Some vessels were employed as privateers, but most of them remained rotting at the wharves until the war had been won. Some trade, to be sure, was carried on among the colonies, but the business was very dangerous and consequently small and irregular. After the war had closed, commerce revived, but soon experienced a period of depression, for credit was poor, money scarce, and the commercial barriers of the states interfered. Delaware and New Jersey tried to secure Pennsylvania's foreign trade by levying lower import duties and by giving more favorable trade regulations. When Massachusetts and Rhode Island placed almost prohibitive duties on imports brought in British ships, Connecticut admitted such imports free with the hope that she would obtain a monopoly of the domestic trade in English products. Some of the states imposed heavy duties on goods brought in from other states, in order to protect their own manufactures and to husband their small supply of coin. These difficulties, among others, led to the Constitutional Convention.

One of the most important factors in the development of the coastwise trade was the growing importance of cotton and the opening of the Mississippi, for the foodstuffs of the West were shipped from New Orleans to various points on the Atlantic coast. Toward the close of the period a considerable amount of cotton and tobacco, as well as of foodstuffs, was shipped to northern cities in exchange for merchandise and manufactured goods. It seems probable that the coastwise traffic would have developed more rapidly had it not been for the great profits in the carrying trade, and this belief seems strengthened by the fact that when our foreign trade was interfered with by the temporary peace in Europe in 1802 there was a decrease in tonnage engaged in the foreign trade, but a steady growth in the

coasting trade. The development of northern manufactures also helped in the increase in the coasting trade. During the Embargo and Non-Intercourse acts and other means by which the United States attempted to force England and France to rescind their obnoxious Orders in Council and decrees, some tonnage was transferred from the foreign to the coastwise commerce, but those measures tended to cripple the trade, though they did not annihilate it. The stimulus applied to manufactures, however, later increased the material for the coastwise traffic.

The War of 1812 practically destroyed all commerce, for soon after it began Great Britain declared a blockade of our coast except Massachusetts, and soon the blockade was extended. British vessels watched off the coast to enforce the blockade, and though at times the severity relaxed, prices became so high that it was profitable to carry on wagon trade between such widely separated points as Savannah and Boston. "For example, flour sold at Richmond for $4.50 a barrel but in Boston for $11.87," rice at Charleston and Savannah was three dollars a hundredweight, but at Boston eight; and upland cotton worth seven cents in Savannah brought twenty in Boston.

Coastwise Commerce, 1815-1860.—After the War of 1812 the country was flooded with English manufactured goods which entered chiefly through the ports of New York, Boston, Philadelphia, and Baltimore. Much of this merchandise was sent on to other ports and this traffic stimulated tonnage development. The most important southern commodities sent north in the coasting trade were cotton, rice, tobacco, whisky, hams, bacon, pickled pork and beef, lard, cheese, butter, flour, corn, and wheat; among the products sent south were manufactured goods and various kinds of merchandise, such as dry goods, wearing apparel, tools, cotton gins, foodstuffs, household goods, and building material. The ice trade began about 1828, when vessels carrying coal to New England would secure ice for a return cargo. New York, Philadelphia, Boston, Baltimore, Providence, Charleston, Savannah, Wilmington, Norfolk, Richmond, Mobile, and New Orleans were important ports for

the coastwise traffic, but because of the westward movement of the cotton fields the South Atlantic ports did not enjoy a prosperity commensurate with that of the North.

During the same period an intercoastal trade developed, for the gold discovery in California in 1848 led to a rapid settlement of that region. Goods imported on the western coast included clothing, provisions, tools, machinery, furniture, explosives, tents, drugs, hardware, and various general supplies; materials exported to the eastern coast included wool, hides, skins, wheat, and barley.

As the government does not keep statistics relative to the value of the coastwise trade, we must depend in large part on the tonnage growth. In 1800 the gross tonnage engaged in the coastwist trade and the mackerel fisheries amounted to 301,919, and twenty years later to 660,065. A decrease then occurred apparently in 1830, but by 1840 tonnage had doubled again and by 1860 stood at 2,807,631, or somewhat more than that employed in the foreign trade. In reality, throughout the period there was a steady growth in tonnage; apparent losses were due to the practice of the government in deducting losses every ten or twelve years in place of every year. In 1851, according to Andrews, the coastwise trade amounted to $2,600,000,000, or about six times the value of the foreign trade, and was the most important branch of the domestic trade. That the coastwise commerce increased in the next ten years seems evidenced by tonnage growth, but the railroads were carrying an increased proportion of goods.

Coastwise Commerce Since 1860.—Although the Civil War stopped the coastwise trade between northern and southern states, tonnage increased to 3,494,199 in 1865, or by two-thirds as much as the loss of tonnage engaged in the foreign trade. Tonnage fluctuated considerably in the next twenty or thirty years and not until 1898 was the four million mark reached; in 1925 the tonnage stood at approximately nine millions, more than that in the foreign trade. These figures, it should be noted, included the internal trade which had virtually all of the increase.

After the close of the Civil War the struggle between the

coastwise shipping and the railroads was renewed. A law enacted in 1870 aided the former to some extent by abolish-

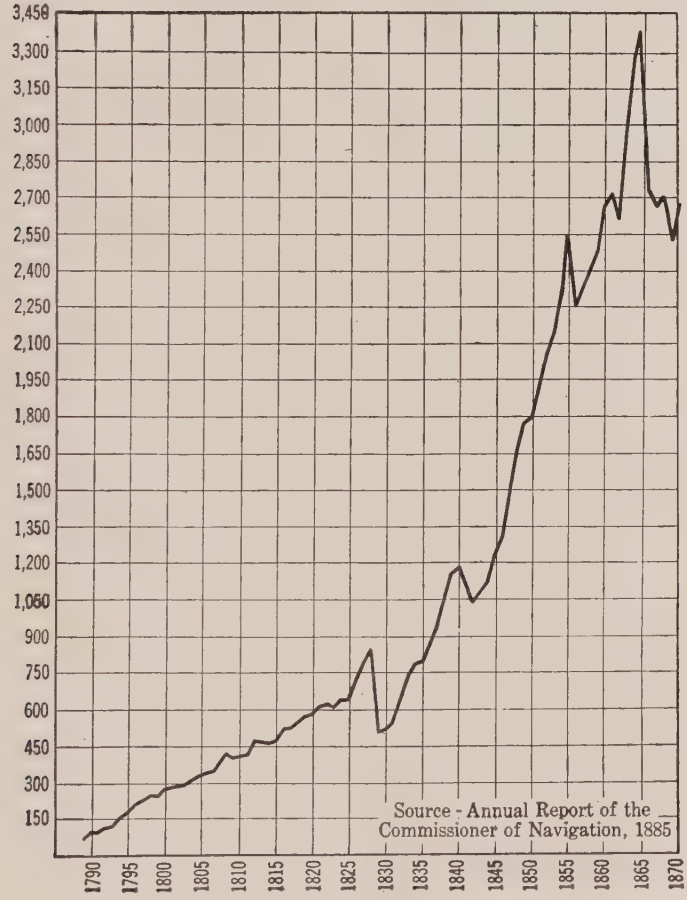

CHART No. 82. TOTAL TONNAGE IN THE COASTING TRADE.

ing all tonnage duties on vessels employed in the coastwise trade, but consolidation and pooling aided the railroads, which at all times seemed to have the upper hand. Georgia and South Carolina lost heavily through the changed ways

of handling the traffic, but railroad competition was equally marked in the North. Although Pennsylvania and Virginia coal, New England lumber, ice, stone, sand, and brick, and other bulky material continued to follow the water route, most of the other commerce was handled by the railroads. New York, Philadelphia, Boston, Baltimore, Norfolk, Wilmington, Savannah, and Charleston were still important ports. On the western coast San Francisco took the lead in both foreign and domestic commerce. California's farms, vineyards, and forests soon surpassed her gold

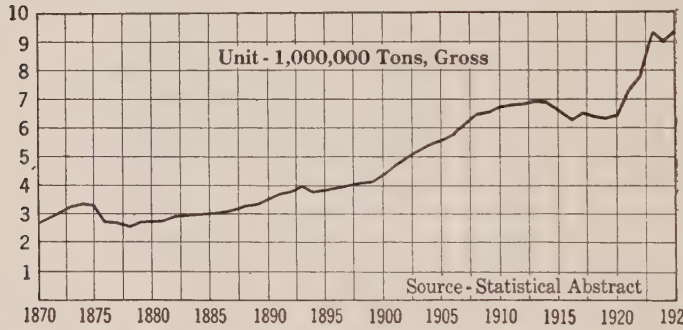

Chart No. 83. Tonnage Engaged in Coastwise Trade and Cod and Mackerel Fisheries.

mines in importance, and lumbering and agriculture developed in Oregon and Washington. Inbound coastwise traffic in San Francisco consisted chiefly of lumber, flour, wheat, barley, and oats; outbound traffic consisted chiefly of lumber, oil, manufactured goods, and general merchandise. Seattle and Tacoma were the chief Puget Sound ports. Their exports were lumber, grain, and coal, and their imports oil, cement, iron and its manufactures, sugar, salt, and all sorts of general merchandise. Portland's traffic was much the same as that of Seattle and Tacoma save that coal did not enter in; flour manufacturing, however, supplied thousands of barrels for the coastwise trade.

The intercoastal commerce between the Atlantic and the Pacific declined during the period, because of the compe-

tition of the transcontinental railroads, the first of which, the Union Pacific, was completed in 1869. In 1870 shipments from New York to San Francisco by way of the Isthmus of Panama were valued at $15,300,000 and return shipments at $3,150,000, but eleven years later they were down to $2,600,000 and $2,850,000 respectively. Though they rose slightly after 1890 their value did not, during the century, reach that attained before railroad competition began.

Before the outbreak of the European War only American vessels could profitably, or legally after 1817, engage in the coastwise trade, which still consists largely of such bulky materials as cotton, lumber, and coal. Railroads frequently bought up the important coastwise and lake steamship lines and then neglected to develop the business; they, moreover, foiled attempts at competitive service. The coastwise tonnage, consequently, except the lake traffic which is not considered here, failed to live up to the promise of earlier days. The Panama Act of 1912 attempted to stop unfair practices by forbidding railroads to operate competing vessels in the Panama Canal or on other routes without the consent of the Interstate Commerce Commission, and that body after investigation ordered the railroads to surrender control of competing boats on the Great Lakes and a few other routes. The opening of the Panama Canal naturally stimulated the Atlantic and Pacific intercoastal trade, and the construction of other canals has likewise aided. The Federal government has appropriated large sums for the improvement of rivers and harbors and for coast survey, and private enterprises have constructed canals noted in a previous chapter. Concerning the coastwise trade, a government publication declared:

> . . . During the war the exclusion of foreign shipping from our coastwise trade was suspended under a system of Shipping Board permits, but it again becomes effective after the conclusion of peace. The coastwise trade thus reserved to American ships includes that of the Great Lakes, and trade with Alaska, Hawaii, and Porto Rico, as well as the traffic between Atlantic, Gulf

and Pacific ports. Within the past quarter of a century the freight carried in this trade has expanded enormously. Its development, moreover, has been greatly facilitated by the opening of the Panama Canal with the consequent shortening of the distance between Atlantic and Pacific ports. No other country in the world has so long a stretch of coast, nor so many excellent harbors between which varied cargoes are seeking water transportation. Millions of tons of ores, coal, wheat, cotton, lumber, oil and general merchandise make up a volume of coastwise traffic which is exceeded only by the carrying trade of Great Britain.

The significance of our coastwise shipping in the development of a merchant marine is often overlooked. It is of importance in itself. In 1914, the American tonnage in foreign trade was hardly more than a million gross tons, but the tonnage in the coast trade totalled 6¾ millions.[1]

Lake Commerce.—There was little traffic on the Great Lakes until the introduction of the steamboat, which was apparently first used on Lake Ontario in 1816. Two years later the *Walk in the Water* appeared on Lake Erie; in 1819 a steamboat was first used on Lake Huron, and in 1826 on Lake Michigan. As late as 1833 there were only eleven small steamers; hence Andrews accepted that date as "the real commencement of steamboat navigation on the upper lakes." Tonnage developed rapidly in the period prior to the Civil War, or from 3,500 in 1821 to three times that amount in 1830, to 54,199 in 1840, nearly four times that amount in 1850, and thereafter as shown in Chart 84. These figures, it should be observed, are included in those already given for coastwise and internal trade.

Prior to the opening of the Erie Canal in 1825, the lake commerce was largely local, for there were no markets, but after the opening of that canal products of all descriptions went east. Trade was, moreover, increased by the opening of the Ohio canals in 1833, of the Illinois Canal in 1848, of the Indiana Canal in 1851, and the completion of the first lock and canal at Sault Ste. Marie in 1855. In 1835 Ohio exported by way of the Lakes 543,815 bushels of

[1] *Commerce Monthly*, January, 1920.

wheat; in 1840, 3,800,000; and in 1851, 12,193,202. The latter amount paid about $500,000 in freight and charges. Although the railroads interfered somewhat with the traffic in the fifties, Illinois, Wisconsin, Indiana, Ohio, and

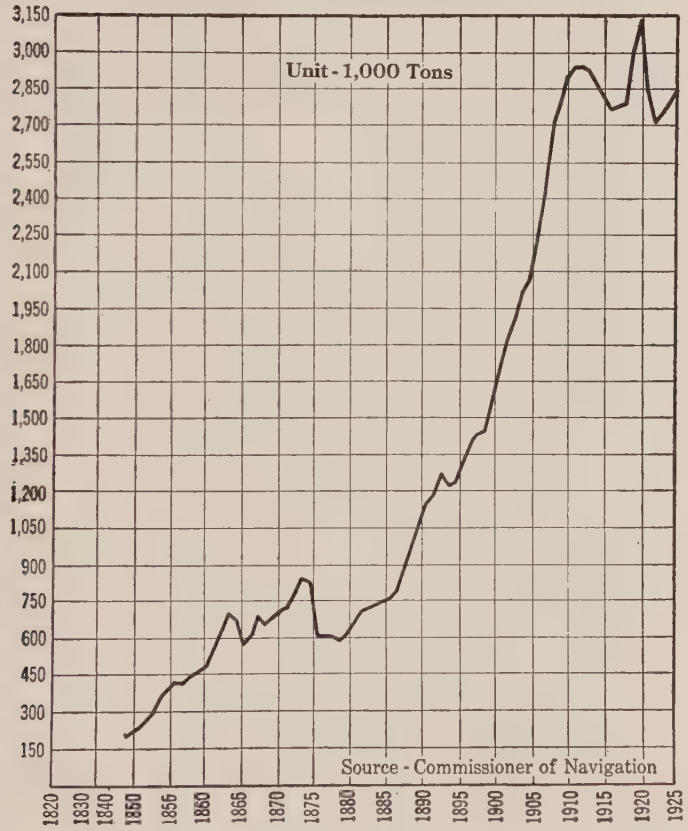

CHART NO. 84. TONNAGE ON GREAT LAKES.

Michigan in the order named were shipping millions of bushels of wheat in the early sixties. Chicago's first grain shipments were made in 1838; in 1860 she sent twenty million bushels east. In that year shipments of western grain received at New York ports amounted to more than

sixty million bushels, and more than two-thirds came from Lake Michigan ports. Milwaukee, Detroit, Toledo, Cleveland, and Buffalo, as well as Chicago, were interested in the grain trade. Other products shipped east were flour,

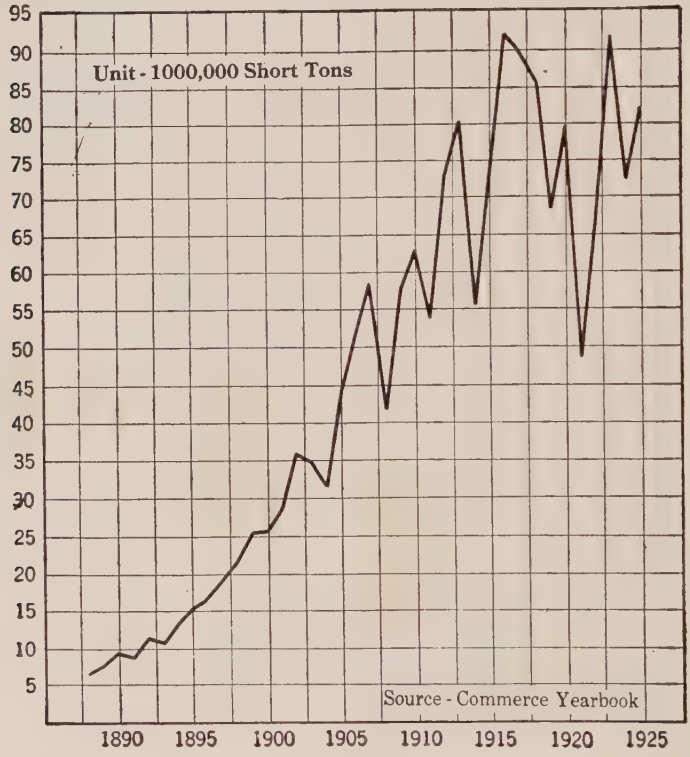

Chart No. 85. Traffic Through Sault Ste. Marie Canals.

pork products, hides, wool, whisky, live stock, copper and iron ores, and lumber.

Although west-bound shipments were less bulky than the east-bound shipments, they were more valuable and included such things as dry goods, cordage, clothing and other wearing apparel, railroad equipment, drugs, paper, machinery, sugar, coffee, tobacco, salt, etc. According to

Professor T. W. Van Metre, the value of Erie canal traffic for states west of New York increased from $9,723,250 in 1836 to $94,230,720 in 1854, but after that date the railroads took over the high-grade trade and even lead, live stock, and other products.

Figures for the total lake traffic are not available, but a good index is the freight movement through the Sault Ste.

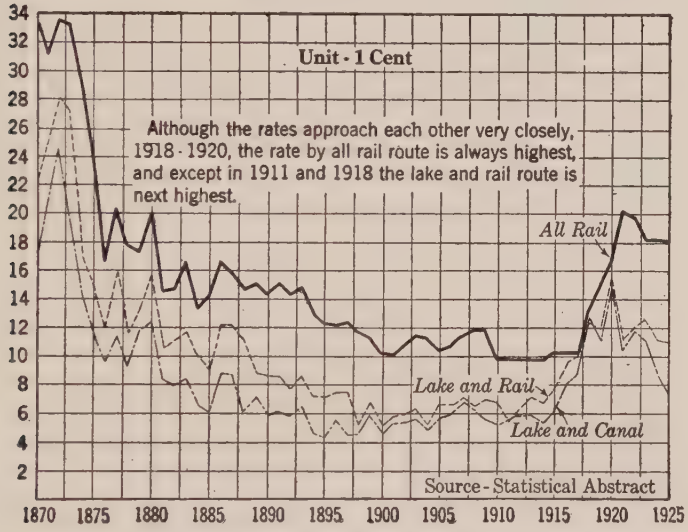

Chart No. 86. Freight Rates on a Bushel of Wheat from Chicago to New York Compared.

Marie Canal. Tonnage of the boats which used this canal increased fourfold, 1855-1860, fourfold again by 1880, twelvefold by 1900, and threefold by 1916, after which decreases occurred. The freight movement since 1888 is shown in the accompanying chart, high points being set in 1916 and 1923. Since 1898 the average distance the freight was carried, with two exceptions, 1921 and 1923, has not been less than 809 miles, nor more than 844. The general tendency seems downward, because of the growth of local traffic. Only twice in the same period, in 1917

and 1918, was the value more than a billion dollars, and then by not more than a fifth. For the same period the low point in cost of carriage came in 1914 at six-tenths of a mill per ton per mile and the high point in 1920 at 1.33 mills. Numerous improvements have naturally been made in equipment. Boats have increased materially in size, steam has been substituted for sail, steel for wood, and loading and unloading facilities have been improved.

In 1900 eighty-six per cent of the east-bound traffic which passed through the Sault Ste. Marie Canal was bound for Lake Erie ports, and almost ninety-six per cent of the west-bound tonnage which started in Lake Erie ports was bound for Lake Superior ports. Local traffic was of little importance save on Lakes Michigan and Erie. In the local trade on the latter fast package freight lines connected Buffalo, Detroit, and Cleveland. On Lake Michigan local traffic was maintained throughout the year, for steam-driven ice floats were used in the winter to break the ice; much of the traffic was cross-lake. One of the main characteristics of the lake trade was the preponderance of east-bound over west-bound shipments. Another point worthy of mention is the dominating position of a few commodities such as iron ore, coal, lumber, and grain, the first two in 1925 composing nine-tenths and the first two-thirds of all tons carried. The west-bound traffic consisted chiefly of coal, salt, and general merchandise. In 1920 Lake Erie had the largest percentage of lake receipts and ranked second to Lake Superior in shipments. Lake Erie was first in total traffic, Lake Superior second, and Lake Michigan, which had the largest amount of local commerce, was third. The chief ports in recent years, though the order sometimes varies, have been Duluth-Superior, Buffalo, Toledo, Cleveland, Ashtabula, Conneaut, and Calumet.

River Trade.—In our colonial period much trade was carried on the rivers which formed gateways to the interior and roads for internal products to reach the coast. A dispute between Maryland and Virginia concerning the navigation of the Potomac led eventually to the calling of the Constitutional Convention. Even earlier the basis

for a diplomatic contest had been laid. In 1763 England had received from Spain the right to the free navigation of the Mississippi, and twenty years later she attempted to give that right to the United States, but Spain objected. Because of the high charges of transportation by land to the East, Westerners had sent their products down the Mississippi and then on east by the coastwise trade. Interference with this trade almost provoked war because the Westerners believed that Easterners were willing to surrender the navigation of the river in return for concessions in the trade with the Spanish West Indies. In 1795, however, Thomas Pinckney succeeded in negotiating a treaty which opened the mouth of the Mississippi to our vessels and gave us the right of unloading and reshipping at New Orleans. In 1802, nevertheless, the Mississippi was suddenly closed to our trade and contrary to the Treaty of 1795 no other place on the river was opened to us. Western farmers threatened to seize New Orleans by force, but the Spanish government disavowed the act of its agent and ordered the privileges restored. The next year the United States purchased Louisiana from France, to whom it had been ceded by Spain.

After the introduction of the steamboat on the Mississippi, commerce increased, though even as late as 1833, eight years after steamboat traffic had passed all competitors, a considerable flat-boat trade existed. The Ohio traffic was important; Pittsburgh and Louisville together had about as much tonnage as New Orleans which, with St. Louis and Cincinnati, was the leader. Wheeling, Nashville, Vicksburg, and Memphis were other important river points. In the nine years, 1842-1851, the tonnage of St. Louis and Cincinnati doubled and that of Louisville and Wheeling practically trebled. Only Nashville showed a decrease. From 1851 to 1860 the tonnage advanced from 135,560 to 249,039; Cincinnati suffered a slight decrease and was passed by Pittsburgh and Louisville, but other river towns, with the possible exception of Vicksburg, gained. New Orleans more than doubled, and Pittsburgh increased two and a halffold. St. Louis, with no railroad

connection until after 1855, was a busy river town dependent upon water transportation for the importation and exportation of flour, grain, meat, tobacco, lead, manufactures, and various other articles of merchandise. In 1850-1851 practically all of Cincinnati's exports except meat products went down the river, but in 1855 the exports to the East were almost equal to those sent south, and thereafter they were greater. In spite of railroad competition, however, the last year prior to the Civil War, with products worth $185,211,154 landed at New Orleans, was the "best year on the river," because the extension of cotton culture more than made up for the fact that only one-fourth of the Ohio Valley products then went south.

Since the Civil War the river traffic has declined, because of numerous reasons, among which are continued westward movement, extension of railroads, lack of centralization of ownership, shyness of capital for investment, interference of ice, currents, and floods, lack of suitable wharfage facilities, unevenness of depth, lack of appropriations to keep channels free from obstruction, and frequent ownership of terminal facilities by railroads. In 1880 tonnage received at St. Louis by river amounted to 893,860 and in 1900 to 512,010; the corresponding figures for rail tonnage were 6,096,524 and 15,375,441. Cotton received at New Orleans by river amounted to 1,087,522 bales in 1880 and to 343,450 in 1900, and that received by rail amounted to 627,577 and 1,935,177. In 1889 all the tonnage carried on the Mississippi and its tributaries amounted to 29,405,000 and ten years later it was probably less; half was on the Ohio and its tributaries. By the close of the nineteenth century, coal, stone, and sand traffic showed decided increase, but lumber, grain, cotton, and iron ore traffic decreased. In the first quarter of the next century the decline seemed to continue. For instance, in 1900 freight carried on the Ohio amounted to 14,054,322 short tons, but from 1911 to 1923 it did not go as high as 10,000,000 tons, though 1924 was about 10,867,000. A similar movement is apparent on the upper Mississippi, but not on the lower where the oil traffic has caused an increase. Tonnage

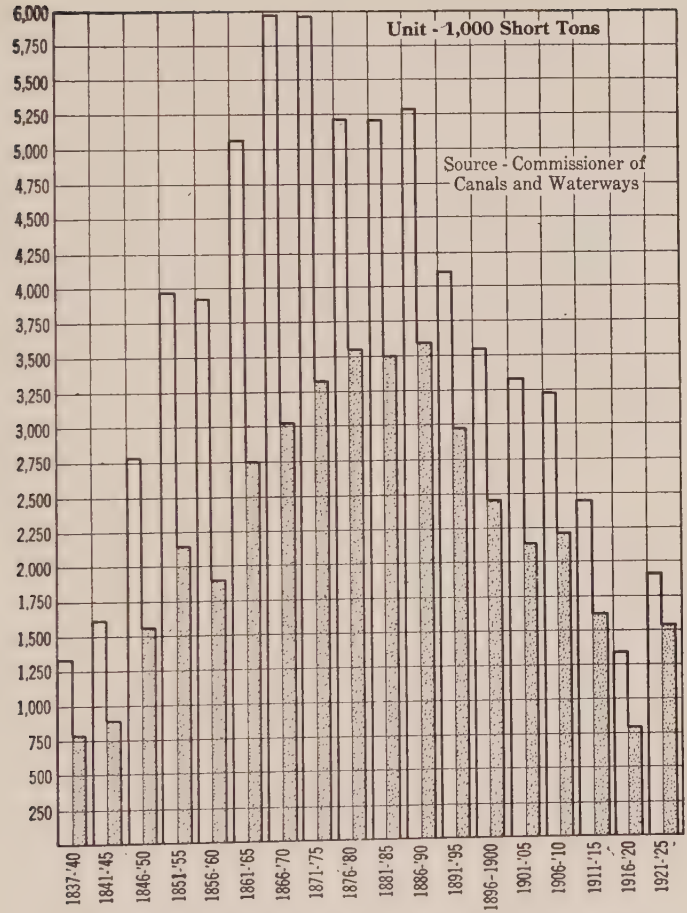

CHART No. 87. NEW YORK CANALS, FREIGHT MOVED ON ERIE AND ALL.

owned on western waters fell from 215,095 in 1903 to 120,230 in 1920, but rose with fluctuations to about 162,000 in 1924. Bulky traffic such as coal, oil, lumber, sand, stone, cotton, grain, and some live stock still moves by the river, but the government has been negligent in encouraging the

river trade, though it has operated a barge line between St. Louis and New Orleans since 1918 and on the Warrior between Birmingham, Cordova, and Mobile. Probably the coming Lakes-to-the-Gulf deep waterway will stimulate river traffic everywhere.

Canal Traffic.—Closely connected with the lake and river commerce is that of the canals, which have already been described. In 1851, according to Andrews, about three thousand miles of canals, exclusive of the coal trade, landed about nine thousand tons a mile, which at sixty-six dollars a ton, gave a gross sum of $1,188,000,000. Canal traffic, however, has declined with the river commerce, and even though tolls were abolished on the most successful of canals, the Erie, in 1882, the percentage of freight carried steadily declined from forty-four in 1868 to twelve in 1890 and to five in 1898. The high point for a five-year average came 1886-1890 with the carriage of 3,589,361 tons, but the trend was downward, with the exception of 1906-1910, to 1918 at 667,374 tons, after which there was a steady gain to nearly 2,000,000 tons in 1925 and to more than 2,344,000 for the entire New York system. The tonnage moved on all navigable rivers and canals has been estimated at 173,190,000 for 1924. (See chart on page 457.)

Land Commerce.—Various commodities have, to be sure, been moved on land by man, animals, and railroads, but, as already noted, in the early period the cost of transportation was almost prohibitive. For example, a freighter charged three dollars for carrying a cord of wood 20 miles and five dollars for transporting a barrel of flour 150 miles. As late as 1810 it cost $125 to move a ton of goods from Philadelphia to Pittsburgh by land, and the charge for moving a bushel of salt 300 miles was $2.50. Probably at the time of the War of 1812 the average charge for moving a ton of goods 100 miles was ten dollars. With the improvement of the roads and the coming of railroads charges were materially reduced and commerce was consequently increased. On January 1, 1852, according to Andrews, 13,315 miles of railway were in operation and did a gross business of 10,815,000 tons, which, valued at one hundred

dollars a ton, would amount to $1,081,500,000. The importance of the railroad in this period is hard to overlook. Kettell, writing about 1860, says:

> Thus in the last twenty-five years, a thousand millions of dollars have been spent in the construction of roads, and yet capital is proportionally more abundant now than before this vast expenditure, and land has, in railroad localities, increased by a money value greater than the cost of the roads! We have seen that before the operation of canals, land transportation was, and is now remote from these works, one cent per mile per hundred. If a barrel of flour is then worth in market five dollars, a transportation of 300 miles would cost more than its whole value; but by rail it may be carried from Cincinnati to New York for one dollar. Thus railroads give circulation to all the surplus capital that is created by labor within their circle. It is on this principle that may be explained the immense prosperity that has been seen to attend the enormous expenditure for railroads, particularly during the last ten years.[2]

In the Far West, however, dependence was still placed upon wagons and oxen. When Mexico won her independence, a trade worth hundreds of thousands of dollars developed, a large part being carried over the Santa Fé trail, to the city of that name where American and Mexican traders met. As early as 1846 more than four hundred wagons left the Missouri River towns for Santa Fé. After the Mormons had settled in Utah, wagon trade began between St. Joseph and Salt Lake City, and after California was opened to settlement some of the commodities were carried in large wagons known as "prairie schooners" rather than in the coastwise trade. The trade with the Mormons consisted chiefly of dry goods, groceries, hardware, and drugs and probably never exceeded 12,000 tons. In 1859 the firm of Russel, Majors and Waddell had 6,000 wagons and 75,000 oxen employed in transporting goods between St. Joseph and Sacramento by way of Salt Lake City. Wells-Butterfield and Company carried mail and products to the West by the southern route, namely St. Louis, Fort Smith, El Paso, Tucson, San Diego, and San

[2] *Eighty Years' Progress*, Vol. I, 193.

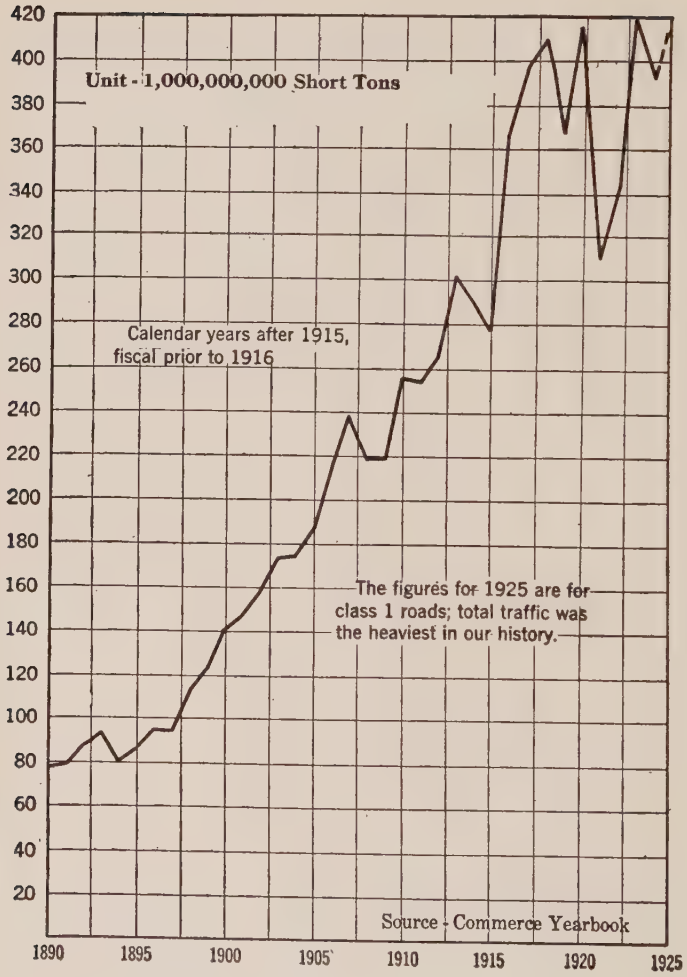

CHART NO. 88. RAILWAY FREIGHT TRAFFIC.

Francisco. In 1860 merchandise to a value of about $10,500,000 was shipped to points west of the Missouri.

With the rapid development of the railroad net there

was a big increase in railroad traffic, and by 1890 the freight carried one mile amounted to 77,207,047,298 tons. With some fluctuations the tendency was upward to 410,306,209,802 tons in 1920, then a decline of about a fourth came for 1921, followed by a revival in more recent years. Improvements in the character of the service, heavy steel rails and cars, electrification and other improvements aided in this growth. In 1890 the revenue per ton per mile was 0.927 cent and a low point was set at 0.715 in 1917, after which the rate was upward. In 1921 it stood at 1.275 cents, but ten per cent reductions were made in 1922, reductions which unquestionably had a part in the banner traffic for 1923. The rate on Class 1 roads in 1925 was 1.098 cents.

Early Stores.—Before attempting to estimate the value of the internal commerce it will be well to pay some attention to retailing. In colonial days, as in early times in England and backward countries now, fairs and markets were held. Because of poor transportation facilities both northern and southern colonies passed laws establishing semi-annual fairs and weekly markets, where manufactures of farm and village were exchanged for products of other localities. To these commercial institutions came people from miles away loaded with the products of their industry; they returned with the necessities and some of the superfluities of life. Peter Kalm spoke highly of the Philadelphia markets, which were held twice a week and in summer practically every day from four or five in the morning until nearly noon. In numerous little villages storekeepers handled various commodities, but exchanges were largely by barter and the price of the article depended upon the medium of exchange. According to Madam Sarah Kemble Knight, if pay for a six-penny knife was offered in hard money it might be had at that price; if in pay, that is, grain, pork, beef, etc., at the price set by the General Court it might be twelve pence; if in pay as money, that is provisions one-third cheaper than set by the General Court, eight pence; and if on trust, as the buyer and merchant might agree. Such a procedure, she remarks,

"seems a very Intricate way of trade and what Lex Mercatoria had never thought of."

The Peddler.—During and after the Revolutionary War trade developed at interior points and at various cross-road stores, but one of the fixtures of the late eighteenth and early nineteenth century was the tin peddler, who, from Berlin, Connecticut, probably, went everywhere, though he preferred to winter in Richmond, Newbern, Charleston, Savannah, or some other southern city. From house to house with his pack or his horse and wagon he plied his trade, and though the load of a single horse was probably not worth more than three hundred dollars or of a wagon more than double that, profits were perhaps greater than those "made by the sale of any other merchandise of equal value." Timothy Dwight, writing about 1797, said:

> Every inhabited part of the United States is visited by these men. I have seen them on the peninsula of Cape Cod, and in the neighborhood of Lake Erie, distant from each other more than six hundred miles. They make their way to Detroit, four hundred miles farther; to Canada, to Kentucky and, if I mistake not, to New Orleans and St. Louis. . . .[3]

Western Storekeepers.—Thomas Ashe describes in an amusing, if not reliable sort of way, the iniquities of western storekeepers who forced undesired articles upon their customers:

> I have known a person ask for a pair of shoes, and receive for answer that there were no shoes in the store, but some *capital gin* that could be recommended to him. I have heard another ask for a rifle gun and be answered that there were no rifles, but that he could be accommodated with the best *Dutch looking glasses* and German flutes in the western country. Another was directed by his wife to bring her a warming pan, smoothing irons, and scrubbing brushes; but these were denied; and a wooden cuckoo clock, which the children would not take a week to demolish, was sent home in their stead.[4]

[3] *Travels in New England and New York* [New Haven, 1821-1822] Vol. II, 44.

[4] *Travels in America, performed in 1806* [London, 1808] 52, 53.

The words "buy" and "sell," Ashe insisted, were well-nigh unknown in the western country, where the universal word was "trade": "'Will you trade your watch, your gun, pistols, horses, etc.?' means 'Will you change your watch, gun, etc., for cows, pigs, cattle, Indian meal, etc.'" After the War of 1812 credit facilities, transportation facilities, and rising standards of living, etc., tended to improve the character of the retail trade throughout the country, though there were then, as there are yet, stores that were unsightly and dealers in inferior goods by barter. In the cities especially fine buildings were erected and after the December, 1835, fire in New York City, a conflagration which destroyed eighteen million dollars' worth of property, a better rebuilding occurred. Thomas P. Kettell closes a description of some of these changes as follows:

> A lot on Broadway, near Broome, sold lately at private sale for $110,000; it had been bought at auction, in 1852, for $35,000. An elderly gentleman present remarked, "This lot was part of the old Colonel Bayard farm, and was given by the Colonel to his barber for a hair-dressing bill. I have seen it sold at auction four times, and each time people decided the buyer crazy to give such a price."[5]

Developments Since the Civil War.—In the period since the Civil War there has been a continuous development in retailing; stores have increased in size and efficiency, in number and in bulk of business, and new types have developed, such as the department store, the mail order house, and chain stores. The importance of the middleman declined in the closing part of the nineteenth century, and retail dealers were in some cases displaced by the practice of the manufacturers in selling direct, or by jobbers or commission men. The jobber purchased his goods from the manufacturer, assumed the risk of sale, and received a large part of the profit arising from market fluctuations. The commission dealer served as the agent of the producer and received a percentage of the sales. In jobbing to a

[5] *Eighty Years' Progress,* Vol. I, 189, 190.

marked extent and in the commission business to a lesser extent there was a decline. The increased size of manufacturing establishments led to the maintenance of regular selling departments and goods were frequently sent on approval from the factory. Moreover, a few large manufacturers owned city retail stores. The Standard Oil Company and the Pittsburgh Plate Glass Company, as well as some others, began to sell direct to retailers or consumers, and this practice, though not always economical, was advantageous when the sales were based on popular trademarks and brands.

Department Stores.—The department store, previously noted, developed about the time of the Civil War. A. T. Stewart of New York City, in 1861, was one of the pioneers in the business. He was followed by R. H. Macy, who won success in the same place. Both stores are thriving to-day, although the Stewart store was absorbed a good many years ago by John Wanamaker, and the Macy family has passed away. Because dry goods, ready-made clothing, fancy goods, boots and shoes, furniture, hardware, groceries, jewelry, etc., are handled under one roof, people do not have to go from one store to another for needed articles. The large and varied assortment of goods, moreover, appeals to numerous classes of buyers. The department store is, of course, a product of the city, where rapid transit, large-scale enterprise, heavy demand, and numerous country and small town visitors encourage it. Marshall Field and Company of Chicago is the largest retail store in the world. About a quarter of a century ago the *Final Report of the Industrial Commission* spoke highly of the benefits of the new institution:

> Department stores buy goods of many classes, often in exceeding large quantities, in some cases purchasing the entire output of mills. Moreover, many stores dealing in special classes of articles have so developed that their purchases are on a scale much larger than before. These large retailers, therefore, tend more and more to deal directly with manufacturers, in fact, often ordering in advance of actual production the particular styles which they desire. This latter practice relieves the manu-

facturer of risk, minimizing the time between the production and the consumption of goods . . .

It is very generally asserted that the consumer benefits largely by the increased directness of the process by which goods are brought to him from the manufacturer. The elimination of the middleman is an elimination of expense. This same tendency to eliminate the middleman is seen in the handling of agricultural products as well as of manufactured commodities, and it is probable that a saving to the entire community has been effected.[6]

Mail Order Houses.—Another feature of the last half of the nineteenth century was the introduction of mail order houses in connection with department stores. By means of this innovation customers could obtain the advantages of a large and varied stock and low prices even when they lived at a distance. The resulting tendency was a reduction in sales for the local dealer, for the better bargains offered through larger capital and economies in rent, superintendence, office expense, and possibly clerk hire were shared with the purchaser. Personal inspection of goods and home pride, will, however, hold the mail order business within limits unless home service is unsatisfactory.

The development of the mail order house has been especially rapid since the inauguration of the parcel post system about 1912. Now, in all probability half of the families of the United States patronize regularly or occasionally a mail order house. One of these houses, Sears, Roebuck and Company, is probably more widely known than any other business organization in the country. In 1920 the company had about six million customers and handled 125,000 pieces of mail each day. The Chicago plant had numerous modern buildings which covered an area of thirty-seven acres and owned a controlling interest in many manufacturing plants located in different parts of the United States. Net sales in both 1919 and 1920 amounted to about $234,000,000, or more than double the sales of 1915, and after a period of depression, 1921 and 1922, due chiefly to the lowered purchasing power of farmers, mounted to

[6] Vol. XIX, 547.

more than a quarter of a billion in 1926. Their nearest competitor is Montgomery, Ward and Company. In recent years both houses have opened chains of retail stores.

Chain Stores.—In the late nineties of the last century there were a few small localized systems of chain stores in operation, but not until about 1902 with the foundation of J. C. Penney Company did the system attain national importance. From one store to 676 stores in forty-four states in 1925 was the record of that organization. The Great Atlantic and Pacific Tea Company, started in 1859, is now the undisputed leader with over fourteen thousand stores and a business pushing a half billion. Piggly Wiggly Company, Jones Brothers Tea Company, and The American Stores Company are other examples. Chain stores are especially common in the grocery, drug, tea, dry goods, men's wear, hat, candy, and tobacco business. The average American is probably more familiar with the system in the operation of the five and ten cent stores, which began at Lancaster, Pennsylvania, in 1879, and developed until by the close of 1925 F. W. Woolworth and Company operated or controlled 1,423 stores in the United States, Canada and England with a business worth nearly a fourth of a billion dollars.

Value of Retail Business.—In 1920, according to Lawrence B. Mann in the December, 1923, number of the *American Economic Review*, retail sales amounted to about $41,600,000,000. Sales in 1921 and 1922 were lower, because of depression. There are now probably about 3,000 department stores, 100 mail order houses, and 1,000 chains which operate about 100,000 stores and handle one-fourth of the entire business; the remainder is handled by about 1,200,000 small retailers. About 3,500,000 people are now engaged in retailing. In 1924 the sales of 359 department stores showed an increase of one per cent over 1923 and surpassed by four per cent the 1920 sales made at "the peak of prices." In both 1925 and 1926 new high records were set. For the entire year, 1926, two of the largest mail order houses did a business of nearly $500,000,000, and the chain stores surpassed previous records.

It is impossible to enumerate all the articles which enter the domestic trade, for practically every article known to man would require consideration. To move these innumerable commodities, locomotives, steamboats, automobiles, aeroplanes, wagons, and pack animals are required. It is likewise impossible to calculate accurately the total value of the internal commerce, though an approximate method has been given in the *Report of the National Conservation Commission:*

> . . . The census shows the value of manufactures, of agricultural products, the products of the mines, the fisheries; and the record of imports shows the value of merchandise brought in from foreign countries and subsequently entering the internal commerce of the country and adding a reasonable sum as the probable cost of transporting them to the consumer, we may at least approximate the value of the merchandise consumed among our own people, a single transaction in which may be properly accepted as a measurement of the value of the internal commerce. . . .[7]

By the application of this standard we find that the domestic commerce of the United States, measured in gold values, was about $2,000,000,000 in 1850, but more than $100,000,000,000 in 1920. Inflated values were largely responsible for the big increase in 1920, but that factor played a part in foreign commerce as well. The total is amazing, for it exceeds the foreign commerce of the entire world.

Contributing to the increase of our domestic commerce are two factors now to be mentioned—parcel post and advertising. Like the express company the parcel post system is built upon the railway system. Inaugurated in 1911 parcel post has enjoyed a rapid growth in the last fifteen years. It duplicates the service performed by the express companies, but is less satisfactory in some respects. It does not collect the goods and its rates for distant traffic are higher than the express rates. On the other hand, parcel post rates are lower than express rates for short distances and rural mail deliveries give it a big advantage

[7] Vol. II, 58.

over express companies. Agricultural products are being delivered in increasing amounts by parcel post and mail order houses have long been delivering their products by the same agency. And so manufactures have been increased

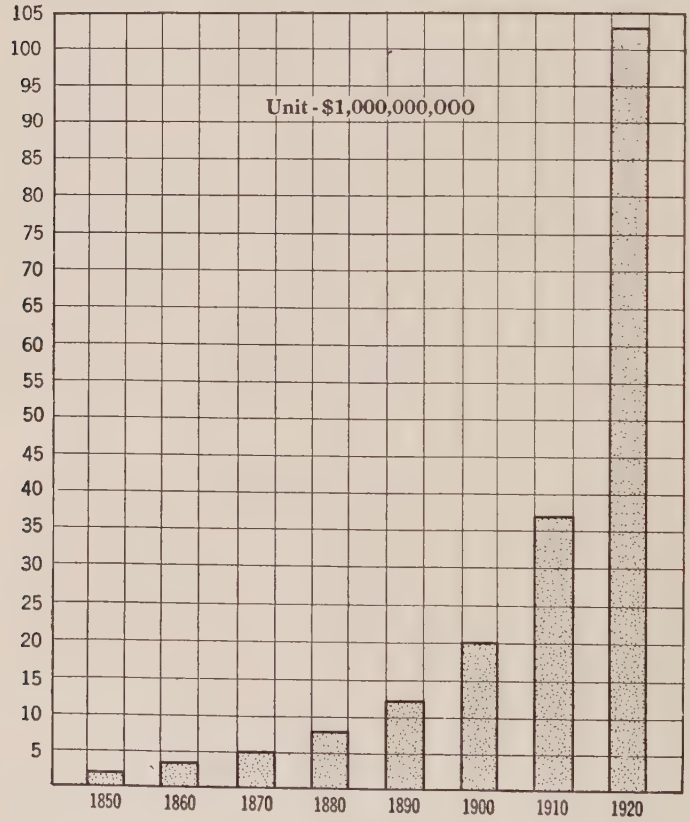

Chart No. 89. Total Estimated Internal Trade.

and commerce widely extended by the parcel post—worthy competitor of the express business.

The ancient Egyptians, Romans, and other people advertised. In 1266 an English law declared: "Every baker shall have a mark of his own for each sort of bread." Out-

door advertising, like the use of trade-marks, dates back to ancient times. Thirteenth century English innkeepers competed with each other in preparing such signs as "The Three Crows," "The Flying Dutchman," etc. Newspaper advertising, of course, waited for printing. In this country probably the first newspaper advertising appeared in the Boston *News Letter* in 1704. Now papers and magazines are crowded with advertisements, some costing thousands of dollars. Trade-marks are legion. Billboards and signs cover the landscape in places and electric signs continue the work at night. Successful advertisements build up individual business houses by increasing the volume of the business transacted, though at times other goods suffer. More markets, too, are now reached because of the development of transportation and post office facilities. And so we buy because we are told to buy and because buying, not paying, is easy. For a number of years our advertising bill has been more than a billion dollars per annum, or equal to the value of all manufactures in 1859.

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CHAPTER XVII

MONEY AND BANKING

Money and banking are of marked importance in economic development. In discussing financial affairs from the earliest colonial days, however, only the briefest sketch can be made of certain important points. In this chapter the topics treated will be: commodity moneys, paper issues, coinage laws, the silver struggle and the adoption of the gold standard, banking, panics, war finance, and receipts and expenditures.

Commodity Moneys.—Because the colonists possessed little metallic money, they early resorted to numerous substitutes such as commodities and paper. It is well-nigh impossible to name any article which has not at some time or other passed as money. Within the historical period, according to Horace White, cocoa beans, salt, silk, furs, tobacco, dried fish, wheat, rice, olive oil, cocoanut oil, cotton cloth, cowry shells, iron, copper, platinum, nickel, silver, and gold have been used. The early settlers of New England, the Dutch in New York, and the people in other colonies made use of wampum, which was current among the Indians as an article of adornment. Wampum soon fell into disrepute because unprincipled colonists dyed white beads black, for the latter were worth twice as much as the former, but the use of wampum, nevertheless, lingered until the early eighteenth century and as far south as Virginia. Because skins were largely used in the northern colonies, musket balls, corn, wheat, rye, barley, and other commodities were current in New England and elsewhere at specified rates. Even cows, goats, etc., were accepted occasionally for college expenses.

In the southern colonies numerous commodities passed

as money. For instance, a North Carolina law of 1715 provided for the acceptance of the following legal tender commodities at stipulated rates: corn, tallow, beaver and other skins, butter, raw buck and doe skins, feathers, pitch, pork, tobacco, wheat, leather, wildcat skins, cheese, "drest buck and doe skins," tar, whale oil, and beef. Gresham's law, that a cheaper money tends to drive a dearer money out of circulation, seemed to apply to commodities as well as to paper and coin, for the people saved that which was good and passed on that which was bad or depreciating. In the extreme southern colonies the most common money was rice. In 1719 South Carolina made rice receivable for taxes, a policy northern colonies had already tried for other commodities. Orders, calling for so much rice, were sometimes issued; one read: "This order entitles the bearer to one hundredweight of well-cleaned merchantable rice to be paid to the commissioners that receive the tax on the second Tuesday in March, 1723." These rice orders were good for all purposes and counterfeiting was severely punished.

The most important commodity used for money in the colonies, however, was tobacco. The first law passed by the Virginia Assembly, July 31, 1619, was one which made the price of tobacco "three shillings the beste, and the second sorte at 18d. the pound." The famous shipment of wives to the Virginia colonists was paid for in tobacco. In 1642 tobacco was virtually made the sole currency by the prohibition of contracts payable in money, and although this law was repealed fourteen years later tobacco continued to be the predominant medium of exchange. The depreciating or fluctuating price of tobacco led to restrictions on its growth, attempted treaties among tobacco colonies, riots, and the famous Parson's Cause, in which Patrick Henry denied the right of the English king to veto colonial laws. Ministers' salaries, fines, and the transactions of business life were expressed in terms of tobacco. The Virginia legislature legalized tobacco notes in 1727 and seven years later introduced "crop notes" which called for particular casks of tobacco. Counterfeiting of tobacco notes was made a

felony. The tobacco, even when stored in warehouses, was, however, the real medium of exchange and this lasted for nearly two centuries in Virginia, and for a century and a half in Maryland. By the close of the colonial period, nevertheless, commodity money was decreasing in importance and though it was found throughout our history in backward districts and is not unknown at the present time, its importance steadily decreased.

Colonial Paper Money.—The first government paper money to circulate in this country was issued in Massachusetts in 1690 to pay soldiers who had returned from an unsuccessful expedition against Port Royal and Quebec, Canada. All the other colonies in time followed the example of Massachusetts. The first issue of seven thousand pounds in Massachusetts was soon increased to forty thousand pounds and issued to the soldiers anticipatory to tax collections. The paper notes were receivable for taxes and were exchangeable for treasury commodities, but they were not payable at a definite time, did not bear interest, and were not legal tender. Inasmuch as they were worth only twelve to fourteen shillings in the pound, the soldiers lost two-fifths of their wages. In 1692, however, they were made redeemable in silver in one year, receivable for taxes at five per cent advance over silver, and legal tender for all payments; hence they were equal to silver for a while. The issues, nevertheless, increased, and in 1704 redemption was extended to two years, in 1709 to four, in 1710 to five, in 1711 to six, and later to thirteen. Depreciation, of course, set in, and aided by neighboring paper money issues drove silver out of the colony. It is impossible to trace the various issues and the resulting evils, but according to Horace White, the ordinary course in the history of emissions was: issue, driving of specie out of circulation, counterfeiting, wearing out of bills, replacement of worn-out and counterfeited issues with new bills, extension of time, depreciation, and repudiation. Often the interests which demanded paper money were dishonest, but perhaps Dr. Douglas, a contemporary writer, went too far when he declared: "All our paper-money-making legislatures have been legislatures

of debtors, the representatives of people, who for incogitancy, idleness and profuseness have been under the necescity of mortgaging their lands."[1]

Colonial records are filled with accounts of distress and demoralization occasioned by the depreciated legal tender. Inasmuch as loans were payable in paper money, the hoardings of age, the inheritance of orphans, and the savings of laborers disappeared, for unscrupulous trustees and executors holding money belonging to other people often postponed payment in order to devour the homes of widows and the inheritances of children. Workmen were sometimes given store pay and so were generally swindled. Paper money created bad feeling between debtors and creditors, royal officials and legislatures, legislatures and Parliament, and engendered a common spirit of lawlessness. In 1751, because of the obvious evils of paper money issues and the demands of creditors England prohibited paper money, with exceptions in case of war and great emergencies, in New England, and in 1764 made the legislation apply to all of the colonies.

Paper Money of Revolutionary War Period.—When the Revolutionary War began, in spite of the unfortunate colonial experiences, the new government issued paper money to the extent of forty emissions of about $241,552,780. In general, the denominations varied from sixty-five dollars down to one-sixth of a dollar. Although Congress did not make the bills legal tender, many states in response to its request, passed resolutions in condemnation of those who refused to accept the bills. When depreciation became marked, legislation was passed by the states to regulate prices. Monopolizers and engrossers were condemned vigorously. After attempting to punish by fine and imprisonment the individuals who advanced prices, the different states commenced to call price conventions and attempted to set the prices of labor and commodities. Congress recognized depreciation on March 18, 1780, by making provision for the acceptance of paper in place of silver at

[1] See White, Horace. *Money and Banking* [Ginn and Company, Boston, 1914] 82.

the rate of forty to one. In January, 1781, depreciation was one hundred to one. Barber shops were occasionally papered with the continental money in jest, and sailors sometimes paraded the street with the worthless finery fastened to their clothing. "Not worth a continental" became a synonym of worthlessness passed only in recent times by "Not worth a ruble" or "Not worth a mark." Concerning its last values, David Ramsay declared:

> The paper currency continued to have a partial circulation for a year after a scale of depreciation was fixed. It gradually diminished in value till the summer of 1781. By common consent it then ceased to have currency, like an aged man, expiring by the decays of nature, without a sigh or groan, it gently fell asleep in the hands of its last possessors.[2]

Under the Funding Act of 1790 some of the new tenor notes, which had been issued in exchange for the old at the rate of twenty to one, were accepted in subscription for stock, but the old emissions were taken only at the very low rate of one hundred to one. This policy, of course, meant the repudiation of ninety-nine dollars out of every hundred.

Competing with the paper money issues of the national government during the Revolutionary War were the $209,524,776 issued by the states. Virginia issued about three-fifths of this amount and South Carolina and North Carolina in well-nigh equal amounts almost all of the remainder. After the disappearance of the continental money seven of the states—Rhode Island, New York, Pennsylvania, New Jersey, North Carolina, South Carolina, and Georgia—plunged into fresh issues of paper money. Radical minorities in other states demanded the issue of paper money and threatened rebellion if it were not issued. The most violent outbreak was in Massachusetts, 1786-1787, where Daniel Shays, a Revolutionary War captain, led about 1,500 armed debtors and temporarily closed the courts at Worcester and attacked the arsenal at Springfield. The results of state

[2] *The History of the Revolution in South Carolina* [Trenton, 1785] Vol. II, 97.

paper issues were as harmful as in the colonial period, but the adoption of the Constitution in 1789 prevented the states from issuing any more paper money. Some individuals later unavailingly argued that the intention was also to prohibit the national government from issuing paper money.

Greenbacks.—In another hard-fought struggle, the Civil War, 1861-1865, the government turned to paper money, the United States notes or greenbacks, as a method of war finance. The issue of February 25, 1862, was for $150,000,000, of July 11, 1862, for $150,000,000, and that of January 13, 1863, for $100,000,000, subsequently increased by act of March 3, 1863, to $150,000,000. The notes of the first issue were non-interest bearing and were in denominations of five dollars and more; in the second issue $35,000,000 in notes might be in denominations of less than five but not under one dollar; and in the third issue all notes might be in denominations of one dollar or more. The notes were legal tender and were receivable by the government except for customs dues and interest on the public debt. The usual evil, depreciation, soon appeared in gold quotations and in enhanced prices for commodities, especially after dropping the bond-convertibility clause in the third act, but not in the marked way of the Revolutionary period. According to Professor Wesley Mitchell, the main factors affecting the gold quotation of greenbacks, which fell to from thirty-eight to forty cents on the dollar in July and August, 1864, were: the increase in amount of legal tender, the condition of the treasury as shown by the secretary's report, government credit as reflected in bond quotations, changes in the executive or legislative departments of the government, relations with foreign countries, and military successes or failures. With the paper money were such fractional notes as shinplasters for amounts of five cents and above and postage stamps.

Opposition to the greenbacks was most marked in California, but in the early issues it was found in all of the states. When the banks and government suspended specie payment, greenbacks became the accepted money. After

the war had ended, however, agitation began in some quarters for contraction. In 1866 provision was made for the retirement of $10,000,000 in six months, but thereafter not more than $4,000,000 in any one month. Early in 1868 contraction was stopped and the amount then stood at $356,000,000. In 1871 and 1872 issues of $6,137,000 were made, but they were speedily retired because of adverse criticism. During the Panic of 1873 because of emergency

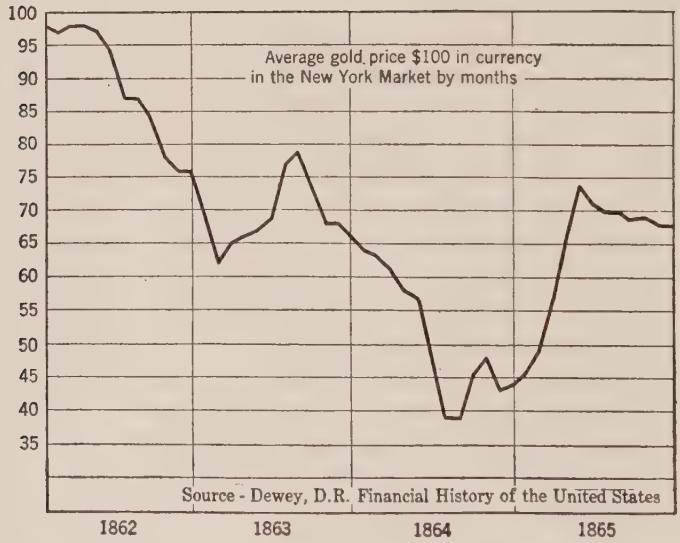


CHART NO. 90. DEPRECIATION OF THE GREENBACKS.

Secretary Richardson put $26,000,000 in circulation, through the purchase of bonds, and the legal tenders were thus increased to $382,000,000. In 1874 an act provided for a permanent increase to $400,000,000, but President Grant vetoed the measure as a departure from true principles of finance and national interest, as dishonorable to creditors, Congressional promises, party pledges, and contrary to his own express views and promises. A provision in another act of 1874 provided that the legal tender notes should never exceed $382,000,000. The Resumption Act of

January 14, 1875, however, was a triumph for the contractionists. It provided that greenbacks equal to four-fifths

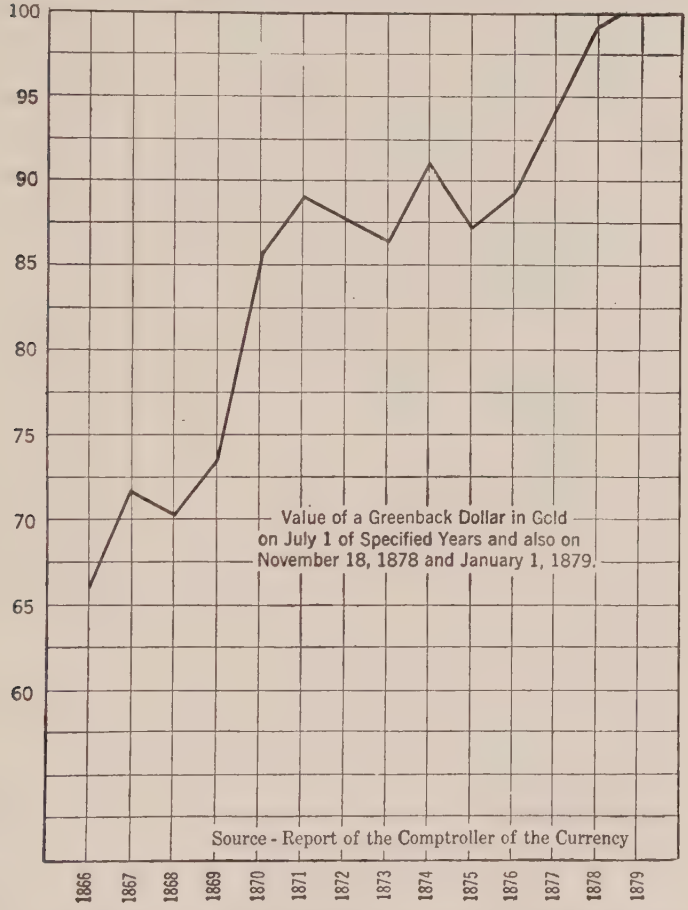


CHART No. 91. FLUCTUATIONS IN VALUE OF GREENBACKS.

of the amount of new bank notes issued should be retired until the total greenback circulation should be reduced to $300,000,000. Among the other provisions of the act were: the substitution of silver coin for the fractional paper cur-

rency, removal of the charge for coining gold, and the resumption of specie payments, January 1, 1879.

Opposition to the government's financial policy was so strong in 1876 that it soon crystallized into the Greenback or National Party, or the Greenback Labor Party. The main demands of this party were: repeal of the Resumption Act, issue of more legal tender notes, suppression of bank notes, and the refusal to sell bonds in foreign markets. In 1878, the high-water mark, the new party polled over a million votes, but less than a third that number in 1880; and in 1884, its last presidential contest, only 175,370. For a while its demands were urged by the Labor Party and later by the Populists or the People's Party. The most signal success of the Greenbackers came in 1878 when Congress ordered that no further destruction of greenbacks occur. The amount then outstanding, $346,681,000, was to be kept in circulation, for the law stated that all notes when received into the treasury should be "re-issued and paid out again and kept in circulation."

In the meantime Secretary Sherman had been gradually building up a gold reserve for the legal tenders through the sale of bonds and by January 1, 1879, they were worth their face value in gold. A favorable trade balance in 1878 helped, but early in 1879 trade and industrial conditions became unfavorable. Luckily for our credit, conditions soon changed. Our wheat, corn, and cotton, our stock, our petroleum, and other products set high records and brought high prices because of failures elsewhere. Within three months $60,000,000 came from France, Great Britain, and Germany, and because the main need of the American bankers was, in the words of A. D. Noyes, "currency suitable for use in interior trade, a large part of this specie went directly into the Treasury in exchange for legal tender notes," a condition which restored and helped to maintain specie payments.

The opposition to the greenbacks in California has already been referred to; here only the briefest mention will be made of three famous cases. In the case of *Hepburn v. Griswold,* 1869, the Supreme Court, with Chief Justice

Chase and four of his associates agreeing and three denying, stated that the notes were not legal tender and implied that they were both unnecessary and improper. The closeness of the decision, the fact that Chase as secretary of the treasury had favored the notes, and the enforcement of gold payments caused difficulty. In the meantime the court was enlarged to eight, not including the chief justice, and a vacancy was filled. In the case of *Knox v. Lee,* 1871, the Supreme Court by a vote of five to four favored the constitutionality of the notes, which were considered appropriate and beneficial means for carrying out the powers of the government and winning the war. This decision, however, applied only to the constitutionality of notes issued in time of war; the case of *Julliard v. Greenman,* 1884, related to re-issues under the Law of 1878. After reviewing early decisions and the case of *McCulloch v. Maryland,* to be noted presently, the court, with one justice delivering a dissenting opinion, decided that the power of issuing paper money and making it legal tender for the payment of private debts "was a power universally understood to belong to sovereignty in Europe and America at the time of the framing and adoption of the Constitution of the United States."

Colonial Metallic Money.—Other issues of paper money, such as the silver certificates, will be noted in connection with coins. As the reader has realized by the references to commodity and paper money, the colonists were severely handicapped by the lack of metallic money. Gold and silver mines were lacking. Then, too, the English mercantile doctrine insisted on securing and retaining coins for the mother country. In a new country, too, implements, such as tools, plows, and household utensils, and manufactured goods were more needed than money. The sparseness of settlement and difficulty of exchange, moreover, made circulation of the few coins slow. Portuguese and Spanish coins were most common, though the colonists still insisted on expressing their accounts in the English terms. The Spanish dollar, or "piece of eight," was normally rated at four shillings, six pence, but the various colonies

gave it higher ratings to secure its circulation. For instance, New York at one time gave it a value of eight shillings. In 1704 Queen Anne's proclamation, later enacted into law, set six shillings as the maximum rating of a "piece of eight," but in spite of a possible fine of ten pounds for violation and six months' imprisonment, the law was disregarded. The scarcity of metallic money is further indicated by a Massachusetts law of 1654 which forbade the exportation of coin, save a sum not to exceed twenty shillings for travelling expenses, under penalty of the forfeiture of the offender's whole estate. About twenty-one years later, during King Philip's War, a deduction of fifty per cent on all taxes paid in coin was offered. The attempts to establish mints in Maryland, Virginia, and Massachusetts were not very successful, though in 1652 and following, Massachusetts minted a little less than six shillings to the heavy Spanish dollar in place of the normal four shillings, six pence. The mint was closed in 1684 because the managers refused to pay part of the profits to the government.

Coinage Laws.—In the period shortly prior to the adoption of the Constitution, English guineas, crowns, and shillings; French guineas, pistoles, and crowns; Spanish pistoles, and Portuguese johannes, half-johannes, and moidores were in circulation. The coins, being of unequal value in different parts of the country, gave an opportunity for clipping and fraudulent change. Under the Articles of Confederation Congress had the right to regulate the alloy and value of coins put out by it or by the states, but those same states had the right to coin money. The first coinage law, 1792, shortly after the adoption of the Constitution, followed in the main Secretary Hamilton's recommendation. The Spanish milled dollar, which had 24.75 grains of gold, was made the American standard, and since the ratio between silver and gold was set at fifteen to one, the silver dollar contained 371.25 grains of pure silver. Smaller coins were given proportionate weight. The law declared that one grain of gold at the mint was worth fifteen of silver, but in the arts demand and bullion market

it was worth 15.47 grains. People naturally exchanged their silver coin for gold and then turned the gold into silver bullion. A hundred dollars invested in this way would bring about $103.13. The first silver dollars minted here weighed a little less than the Spanish milled dollar, but they were readily accepted in the West Indies and exchanged for Spanish dollars which were brought here, melted, and turned into American dollars at a profit of about one dollar to the hundred. Because the mint was working without pay and was unsuccessful in giving the country a supply of silver dollars, coinage was ordered stopped in 1806. Up to 1834 the only domestic coins in circulation were those of small denomination.

In 1834 a new coinage law was enacted; three years later it was modified slightly. The new law made 23.22 grains of gold instead of 24.75 the equivalent of a dollar, but since the amount of pure silver in a dollar was kept at 371.25 grains, the ratio was 15.98 to 1 in place of 15 to 1. In the arts demand or the bullion market, however, the ratio was 15.625 to 1. Both coins were approximately nine-tenths fine; the gold dollar weighed 25.8 grains and the silver 412.5 in comparison with 416 under the earlier law. A person could melt a thousand dollars in silver and receive in exchange gold bullion which could be changed into coin worth about $1,023. A person with a thousand dollars in the old gold coins would change them into new coins worth about $1,066. The higher value given to gold coin at the mints than in the open markets caused a goodly number to enter circulation for the first time. The discrepancy was increased still more by the discovery of gold in California in 1848, for prior to that time the annual product of the United States had not exceeded $250,000, but by 1853 it reached $65,000,000. The immediate effect was to debase still more the value of gold in terms of silver and to drive the fractional silver coins out of circulation. Congress, consequently, in 1853 reduced the weight of the half dollar to 192 grains and the other minor silver coins in proportion.

The Silver Struggle.—During the period of the Civil War and following, little metallic money was in circula-

tion, for greenbacks drove out silver. With the resumption of specie payment the struggle began anew to make the mint ratios of gold and silver correspond with the market ratios. In 1873 the amount of silver that went into a silver dollar was worth $1.02 if sold to the silversmith and put in a napkin ring or an umbrella handle. Naturally the owners of silver mines did not take their product to the mints, but disposed of it on the markets. Congress recognized the existing state of affairs by passing in 1873 a little-regarded law which dropped the standard silver dollar from the coins of the United States, but provided for a trade dollar of 420 grains.

In the seventies, however, events happened which definitely changed conditions. In 1870 and 1871 Germany adopted the gold standard and sold her silver; in 1873 the Latin Union limited the coinage of silver; and in 1875 Holland and the Scandinavian countries demonetized silver. This silver, which was available for the markets, tended to depress the price. Another factor working to the same end was the increased production here. One mine with an output valued at $645,000 in 1873 increased its yield to $16,000,000 within two years. The Comstock Lode of Nevada yielded $42,000,000 in three years. The annual production of silver increased from $1,000,000 in 1861 to $30,000,000 in 1875. The price of silver fell rapidly and in 1874 for the first time in years the silver in a dollar was more valuable than the same amount of silver in a bracelet, napkin ring, or umbrella handle. The mine owners now referred to the "Crime of 1873" and demanded the renewed coinage of silver dollars. Western farmers and disappointed Greenbackers joined, as did some workmen and many honest individuals who really believed that the hard times and money stringency of 1873 were due to the "Crime of 1873," or the dropping of the standard silver dollar from the list of legal coins. Debates abounded with charges and counter-charges, but not until 1878 was the Bland-Allison Act passed.

Allison in the Senate secured an amendment to the Bland measure whereby the monthly purchase of the government

was limited to not less than two nor more than four million dollars' worth of silver a month. This bullion was to be coined into dollars of full legal tender and paid out in the

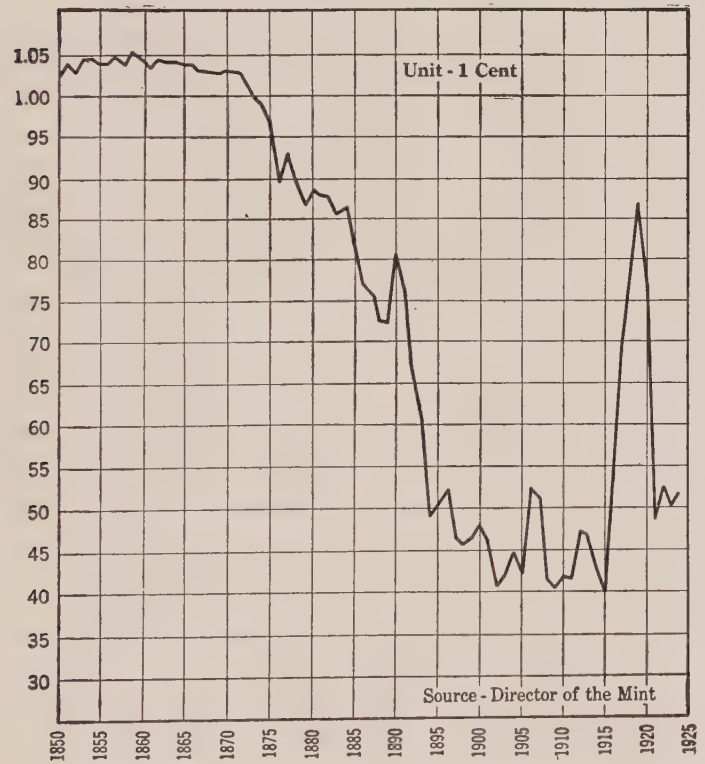


Chart No. 92. Value of Silver in Silver Dollar.

same way as any other money. Holders of silver dollars were given the right to receive in exchange certificates of deposits in denominations of not less than ten dollars which were receivable for all government dues. Later, in 1886, denominations of one, two, and five dollars in paper were allowed. The coinage of silver dollars during this period

just about kept pace with the needs of the country. During the operation of the law about 378,166,000 silver dollars were coined, or about 30,000,000 annually, for the secretary approximated the minimum rather than the maximum amount. Inasmuch as the purchase value of the silver was about $308,279,000, the seigniorage turned into the treasury amounted to nearly $70,000,000. In spite of the government purchases, however, the decline in value of silver continued, though an occasional year showed an upward swing.

The western demand for increased coinage of silver overcame eastern opposition, for the East wanted a protective tariff and could obtain western support only by making concessions on the silver question. The Sherman Act, as eventually passed in 1890, authorized the secretary of the treasury to buy 4,500,000 ounces of silver monthly and to issue in payment treasury notes which were of full legal tender value in place of partial as had been the silver certificates issued under the Bland-Allison Act. The Sherman Act, moreover, differed from its predecessor by providing for the redemption of the treasury notes in either gold or silver coin as the secretary might see fit. The most marked difference, however, was the increase of yearly coinage from about $30,000,000 to $50,000,000. During the three years that the law was in operation the treasury notes issued amounted to $155,931,002.

If the coinage under the Bland-Allison Act had been just sufficient to keep pace with the needs of the country, that under the Sherman Act was excessive, and tended to drive gold out of circulation. In the first half of 1891 $74,000,000 in gold left the country, and though the harvests of 1891 helped us, gold exports began again in 1892. In order to keep up the gold fund, which was at the danger point when Harrison left office, the Cleveland administration in the years 1894-1896 issued $262,000,000 in bonds, and as President Cleveland, who was severely attacked for the Morgan sale, said, "The credit and fair fame of our nation were saved." The excessive purchase of silver was considered the cause of the gold depletion, but the repeal of

the purchasing clause of the Sherman Act in 1893 did not stop the gold drain.

The silver people, of course, redoubled their agitation, for the price of silver continued to fall. In 1893 the amount of silver in a silver dollar was worth only sixty cents, but in 1894 it went to forty-nine, chiefly because of the stoppage of silver coinage in India the previous year. Western miners naturally wanted the purchase of silver by the government to bolster up the prices of the mine product. In this effort they were supported by the Greenbackers, Populists, western farmers, laborers, and the debtor interests generally, and opposed by the business interests of the East. The question was decided in 1896. The Democrats, with William Jennings Bryan as their presidential nominee, favored the unlimited coinage of silver at the ratio of sixteen to one; the Teller wing of the Republican Party favored the same platform, as did many Prohibitionists, Socialists, and members of the National Silver Party. The Republicans favored free and unlimited coinage of silver only with the aid and consent of the leading nations of the world; the Gold Democrats and various members of other parties took a somewhat similar view. The candidate of the Republicans was William McKinley. The election was one of the most hectic the country has ever known. McKinley received 7,111,607 popular and 271 electoral votes; Bryan received 6,509,052 popular and 176 electoral votes. Save in the South not a state east of the Mississippi cast its vote for Bryan, though the polling was occasionally close as when Bryan received 477,497 to 525,991 for his opponent in the latter's native state of Ohio.

The election of 1896 gave the death blow to the popular movement in favor of silver, for gold discoveries in Alaska in 1896 and 1898 helped dispel the feeling that gold was not sufficient for our needs. A law enacted in 1898 provided for the coinage of the silver bullion bought under the Sherman Act and ordered the retirement of the legal tender notes which had been used to pay for the bullion. About two years later, March 14, 1900, Congress definitely adopted the gold standard and declared that all forms of money

issued or coined should be kept at a parity with gold. The gold reserve, which had been rather vaguely recognized at $100,000,000 in 1882, was increased to $150,000,000 and could henceforth be used only for note redemption. If the volume of gold fell below $100,000,000, it was to be restored by the sale of one-year three per cent bonds.

The silver agitation, long considered deceased, came to life in the period after the European War, but this time it was due to high prices caused by decreased production and increased demand. The silver production in the United States had amounted to 74,961,000 ounces in 1915, but to only 55,285,000 in 1919, while silver production in Mexico was practically paralyzed by political anarchy. This declining production in the two greatest silver-producing countries came at a time when the demand was increasing, for China, India, and Japan were exporting large amounts above their imports to Europe and the United States, and were willing to accept silver in payment. In 1918 the United States exported about $204,000,000 in silver and in 1919 about $225,000,000, mostly to Asia and chiefly on account of England. There were, we should remember, well over 500,000,000 silver dollars coined under the laws of 1878 and 1890, stored in our treasury and held in trust for one, two, five, ten, and twenty-dollar silver certificates. Economists had recommended the sale of this silver hoard even when as bullion a dollar was worth about fifty cents with the chance of a fall to twenty-five if the entire amount were thrown on the market. Congress did not sell until a decreasing supply and a growing demand led to a higher price.

The Pittman Act, 1918, authorized the secretary of the treasury to break up and sell not more than 350,000,000 dollars, but specified that he should purchase enough silver from our mine owners at a dollar an ounce to take the place of the coins which had been broken up and sold. Between April, 1918, and the autumn of 1919, $260,000,000 in silver were turned into bars and exported from the country. In January, 1920, 288,221,000 silver dollars were left, which, if sold at the price prevalent at that time would have

netted the government from twenty-five to forty per cent on the transaction. In other words, the amount of silver in a dollar was then worth $1.07 in contrast with $0.49 in 1894, and $1.02 in 1873. With the fall in price of silver a little later silver mine owners demanded the immediate resumption of silver coinage and this came in 1921. This action meant another useless silver hoard, and the pay-

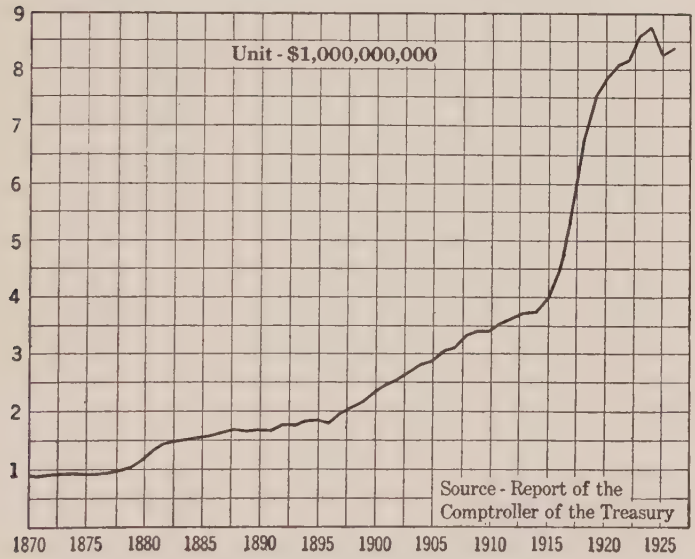


CHART NO. 93. STOCK OF MONEY IN THE UNITED STATES.

ment to the mine owners of a subsidy of the difference between the price required by law and the market price. In February, 1921, when preparations were made for the coinage of silver, the subsidy amounted to about forty cents on the dollar. Purchases of silver under the act stopped on June 30, 1923, with a silver hoard of about 500,000,000 dollars.

Early Banking.—Colonial ideas on banking were largely derived from Europe. One of the first of these banks was established at Amsterdam in 1609, two years after the

founding of Jamestown; the Bank of England was founded in 1694. The colonial bank, however, did not measure up to the European standard and Francis A. Walker was not far wrong when he defined it as "simply a batch of paper money." The security offered was generally mortgage on land; the colonial bank usually placed its notes in circulation by buying goods or loaning notes at interest on land or personal property. Massachusetts, Connecticut, Rhode Island, New Hampshire, and other colonies attempted banks, but with the exception of Pennsylvania where for a while wise provisions were made for redemption, banking was a failure. The suppression of the notorious "Land Bank or Manufactory Scheme" of Massachusetts in 1741 by the application of the English Bubble Act of 1720, clearly *ex post facto* legislation, was a cause of discontent in that colony which was not removed until the Revolutionary War.

When the national government was inaugurated in 1789, there were three important banks in the country, one at Philadelphia, one at Boston, and one at New York. The first, known as the Bank of North America, had been planned and organized by Robert Morris in 1781; the second was chartered in 1784, and the third was proposed by Alexander Hamilton in 1784 but not chartered until 1791. When Hamilton became secretary of the treasury, he placed a national bank, with the funding of the debt, the assumption of state debts, and the mint laws among his monetary measures.

First Bank of the United States.—In spite of considerable opposition a bank bill was passed in 1791. Only one negative vote was cast north of the Potomac, and only three affirmative votes south. Washington asked for written opinions from his cabinet. Randolph, Attorney-General, and Jefferson, Secretary of State, both from Virginia, opposed the bill; Knox, Secretary of War, and Hamilton, Secretary of the Treasury, the one from Massachusetts and the other from New York, favored it. Washington, convinced by Hamilton's argument of implied powers, signed the measure.

The capital, set at ten million dollars, consisted of twenty-five thousand shares of four hundred dollars each. Eight millions of this stock were open to the public and one-fourth of each subscription was to be paid in specie and the balance in government obligations at six per cent interest. The subscriptions were to be paid within two years; the government's share of two million dollars was payable in ten installments with interest at six per cent. Each shareholder was allowed one vote for his first share and an extra vote for each share up to and including thirty. Foreign shareholders could vote only in person and at least one-fourth of the directors in any year were ineligible in the following year. The circulating notes of the bank were practically limited to the capital stock and the charter to twenty years. Branch banks might be established.

Washington was well pleased with the sale of stock, for in one hour all was taken, and in his own words "application made for upwards of four thousand shares more than were granted by the institution, besides many others that were coming in from different quarters." The bank was a success from the start. It aided the government in the collection of customs duties, forced state banks to redeem their notes, cared for government funds, and moved them from place to place. The bank and its eight branches had about two-thirds of the government funds, but at least eleven local banks were used as places of deposit in 1811. Opposition, due to the state banks and the belief in unconstitutionality, led to the refusal of charter renewal in 1811. When the bank was put into liquidation, it paid its shareholders about $434 for each four-hundred-dollar share.

State Banks.—In September, 1814, specie payments were suspended by most of the banks south and west of New England and the notes fell to a discount of from ten to thirty or more per cent. The government proved unable to pay the interest on the public debt and during the period, 1811 to 1816, business was hampered by the export of seven million dollars to the foreign holders of stock in the first bank and by the undue expansion of state banks which increased from 88 to 246. Because the government

after the suspension of specie payments accepted state bank notes for public dues, it encouraged an undue expansion of bank note circulation, which rose from about $45,000,000 in 1812 to $100,000,000 in 1817 and, moreover, appeared to place a premium on dishonesty by diverting imports from Boston, where notes were nearest par, to Philadelphia, Baltimore, and other ports where they were depreciated. With these evils clearly in mind the friends of a United States bank prevailed and, after the consideration of various plans, enacted a law in 1816 for its establishment.

Second Bank of the United States.—The Second Bank of the United States resembled the first in some particulars; for example, the government held one-fifth of the stock, chose one-fifth of the directors, and promised not to charter another bank during the twenty-year life guaranteed to the bank. Foreign stockholders were not allowed to vote in person or by proxy. Circulating notes could not be issued for less than five dollars and all notes required the signature of the president and principal cashier. Bank notes were receivable for all debts due to the United States. The bank, as in the case of its predecessor, transferred funds from place to place in the United States and kept the government's money in its vaults or that of its branches unless the secretary of the treasury decided otherwise. The government's subscription was payable in specie or in government obligations. In return for the exclusive twenty-year charter the bank paid the United States $1,500,000. The capitalization of the bank was placed at $35,000,000, or three and a half times that of the first bank.

The history of the bank may be conveniently discussed under three heads: a period of mismanagement, 1816-1819; the period of declining opposition, 1819-1829; and the bank war, 1829-1836. In the first period violation of the charter and mismanagement led to a Congressional report in favor of rescinding the charter and to the failure of the Baltimore branch for $3,000,000. The president and cashier of the Maryland branch had taken $1,600,000. The bank was really bankrupt at the time and was saved only by the government deposits of $8,000,000. The placing of Lang-

don Cheeves, a sound business man, at the head of affairs enabled the bank to weather the crisis, for under him bank affairs improved and under Nicholas Biddle, who succeeded Cheeves in January, 1823, the improvement continued. Biddle increased the note circulation by the use of branch drafts which were orders for sums of five, ten, or twenty dollars, drawn by a branch on the mother bank, payable to a bank officer and upon endorsement to the bearer. Under the old system when all notes had to be signed by the president and cashier only fifteen hundred could be issued daily, but under the new system the circulation was rapidly extended from less than $5,000,000 in 1823 to about $20,000,000 in 1832. State opposition manifested itself in this period by the attempt to tax the bank out of existence, but in the case of *McCulloch v. Maryland,* 1819, and *Osborn et al v. United States Bank,* 1824, the Supreme Court, with Marshall stating the decision, held that the bank was constitutional and necessary and that a state could not tax the bank or one of its branches.

When Jackson became president, difficulties with the bank began, for he doubted its constitutionality, resented its reported political activities, and yielded to the advice of prejudiced friends. Some of the bank advocates, believing that they could defeat Jackson if he dared to veto a bill to recharter the bank, and secure a desirable measure by 1836 when the charter expired, passed the bank bill in 1832. Jackson accepted the dare and vetoed the measure. He characterized the bank as unconstitutional, as a gigantic monopoly favorable to the East and oppressive to the West, as an institution whose shareholders would be enriched by fifty per cent without cost to them or benefit to the country, and as an engine which foreign shareholders could use to damage the country. Jackson's message had little sanity in it except as a political appeal to the poorer classes and the West, where in the states of Ohio, Indiana, Illinois, Kentucky, and Tennessee only 1,804 shares of bank stock had been held in 1828. In the election Clay lost even Pennsylvania, where more than one-fifth of the 350,000 shares of bank stock were held. Jackson interpreted his

election as an endorsement of his stand on the bank question and soon ordered McLane to remove the government deposits. When that official refused, he was promoted to the secretaryship of state and Duane became treasurer, but as he also refused to take the desired action he was removed and Taney became treasurer. The latter followed Jackson's wishes and the money was checked out without replacement in the ordinary course of business. With Jackson's motives, the bank's attitude, the censuring and expunging resolutions, and the brief career, 1836-1841, as a state bank in Pennsylvania we are not interested. It must suffice to point out that as a government institution, in spite of early mismanagement, the bank was a decided success, and that the government itself, according to one authority, derived a clear profit of $6,093,167.07 from its connection with the bank.

Independent Treasury.—With the use of specified banks to deposit government funds, numerous other institutions, referred to as "pet banks," were organized in hopes of getting the government deposits. But shortly in order to care for its funds the government established the independent treasury, 1840; the Whigs repealed the measure in 1841, for they expected to establish another bank, expectations blasted, however, by Tyler, our first accidental president. In 1846 the independent treasury was reestablished. Treasury notes as well as silver and gold were made receivable for public dues and the new treasury building at Washington with the mints and custom houses was provided with vaults and safes. The principal deposit centers were New York, Philadelphia, Washington, Charleston, New Orleans, and St. Louis. In 1920 this act was repealed in so far as it provided for sub-treasuries, and from October 25, 1920, to February 10, 1921, the various sub-treasuries beginning with Boston and closing with Cincinnati were dropped and their work taken over by the Federal Reserve bank or its branches.

State Banking.—During the period prior to the Civil War numerous state banks were formed, and though some were as poor and unsafe as those of the colonial period, the

State Bank of Indiana, the Wisconsin Marine and Fire Insurance Company, the Louisiana banks after 1842, and

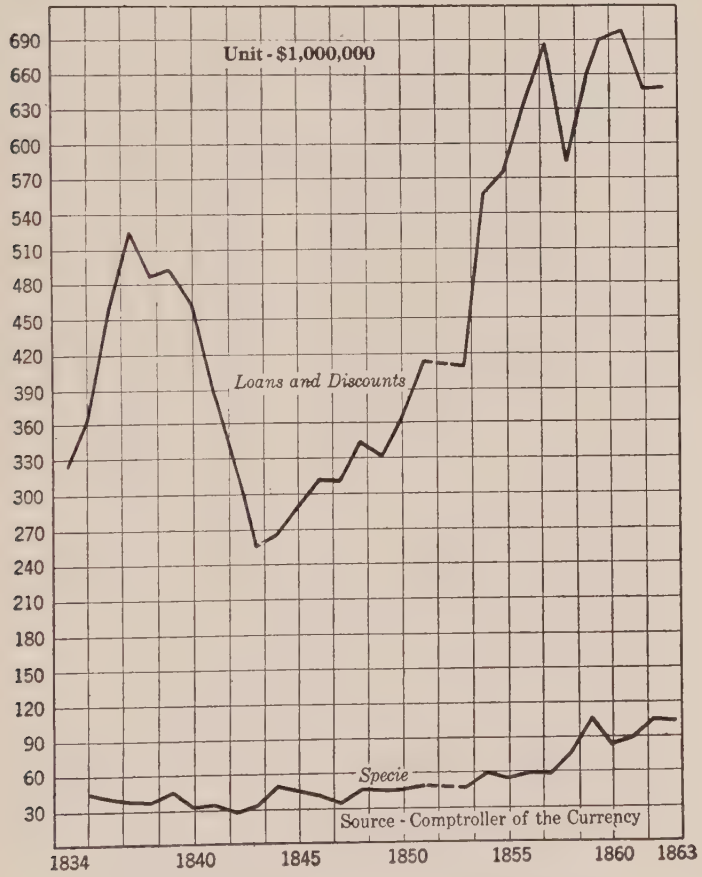


CHART NO. 94. STATE BANKING, SOME RESOURCES.

the Bank of Ohio were all fairly successful. The Louisiana law was the first one in the United States which required banks to keep a cash reserve proportionate to their deposits and circulation. One of the most successful systems in the

country was the Suffolk, originated in Massachusetts and named after the Boston bank which later assumed charge. Under the system, from 1813 on, the banks sent foreign

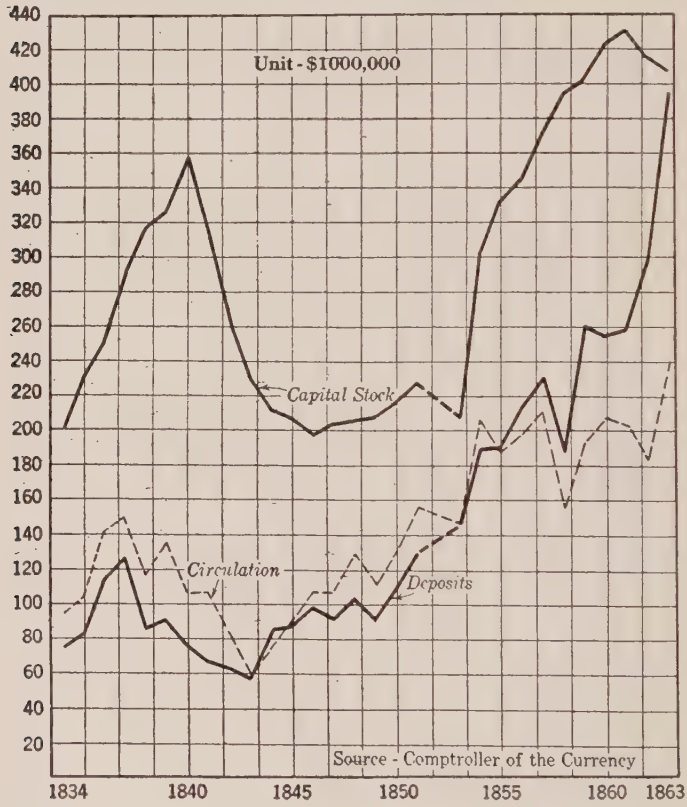


CHART NO. 95. STATE BANKING, LIABILITIES.

bills to the issuing banks for redemption and charged the bill holders only the actual cost of collection. In time practically all of the country banks kept on deposit with the Suffolk a fund for the redemption of their notes. In 1856, the high point, about $397,000,000 in notes were redeemed at the Suffolk Bank, and the average, 1841-1857,

was about $219,000,000. In 1857 five hundred banks were in the system and the notes were widely circulated in the United States and Canada. In New York in 1829 the Safety Fund System was inaugurated. All new or re-chartered banks were compelled to pay a yearly tax of one-half of one per cent on their capital stock until they had paid in three per cent. This money was to be used to redeem the notes and pay the debts of insolvent member banks. Additional funds might be required if necessary. Because the fund was insufficient, the law was amended in 1842 so that the safety fund became a security for circulating notes only. In the early period when individuals wanted to charter a bank, they had to obtain permission through special legislative act, but in 1838 New York inaugurated the free banking system whereby the law stated the conditions to be complied with and any group without further legislative acts could start a bank by obedience to the general law. By 1860, fourteen states, chiefly in the North, were in the system.

National Banking System.—The national banking act grew directly out of the desire to provide a market for United States bonds during the Civil War, but other causes are worthy of notice. Because the charter rested on national rather than state authority, it appealed to the national spirit. To the business community uniformity of circulation was also highly desirable. On January 1, 1862, the United States had 1,496 banks with an aggregate capital of $420,000,000 and a circulation of $184,000,000. These banks were established under the laws of twenty-nine states with a wide range of privileges and restrictions. In 1862, according to Professor D. R. Dewey, only 253 banks issued notes which had not been counterfeited. Another argument in favor of the national system was the redundancy of circulation. For instance, in 1862 the circulation increased from $130,000,000 to $167,000,000. Another defect in the old system was the unequal distribution. For example, New England had about $50,000,000, but Ohio with three-fourths as many people had only $9,000,000. Violent contraction and expansion to be noted presently in connec-

tion with panics was another drawback of the old system. The policy of the banks, moreover, in discrediting government demand notes, in redeeming their own circulation in legal tenders, and in using depreciating legal tender for a reserve was believed harmful to the national government. The act, finally passed in 1863, provided that when a banking association deposited bonds with the treasurer of the United States it could receive bank notes up to ninety per cent of the par value of the bonds. Notes were to be limited to $300,000,000 and apportioned roughly as population and banking needs seemed to require. The law was amended in 1864 and the next year a tax of ten per cent, operative July 1, 1866, was imposed on the circulating notes of state banks.

State banks entered the system slowly. Circulation did not increase rapidly; the high point of the century came in 1882, after the note issue privilege had been increased, at $352,464,788. Banks, because of the high price of government bonds, found it more profitable to sell the bonds, and this, of course, led to the retirement of bank notes. The decline began about 1883 and by 1891 the note circulation had fallen to $162,220,646. The Act of 1882 attempted to make note issue more profitable, but with little effect. In 1900 the law was modified in three important particulars. Circulation could now be issued up to the full par value of the bonds, the tax on circulating notes based on new thirty-year two per cent bonds was reduced from one per cent to a half per cent, and the required capital in towns of under three thousand was reduced from fifty thousand dollars to twenty-five thousand.

In 1907, because of hard times, the Aldrich-Vreeland Emergency Currency Law was enacted. It provided that national banks in time of emergency could obtain additional circulating currency by depositing commercial paper and securities with a "national currency association," which held them in trust for the United States. This emergency currency resembled in many respects the clearing house certificates issued in times of panic. The National Monetary Commission reported in 1912 in favor of a gigantic

central reserve bank with fifteen district branches owned and managed by the member banks.

Federal Reserve Act.—This plan, however, appeared to the Democrats to mark too great a concentration of power, and the Federal Reserve Act, approved December 23, 1913, provided for not more than twelve regional banks. These were located at Boston, New York, Philadelphia, Richmond, Atlanta, Cleveland, Chicago, Minneapolis, St. Louis, Kansas City, Dallas, and San Francisco. All the national banks in the district of a regional bank are "member banks" and state banks are encouraged to become members. Each member bank subscribes to the stock of the regional bank and keeps part of its reserve with the regional bank.

The regional bank is a bank for banks and has little dealing with the public aside from the purchase and sale of gold, government bonds, and specified bills of exchange. A regional bank may rediscount notes, bills, and commercial paper for the member banks, and if directed to do so by the Federal Reserve Board, must render a similar service for another regional bank. By this method idle funds can be readily moved from one part of the country to another. Provision for an elastic currency is made by the Federal Reserve note which may be obtained by the bank for rediscounted commercial paper. A regional bank must keep a gold reserve equal to two-fifths of the Federal Reserve notes requested. Federal Reserve notes thus had a backing of 140 per cent, but the security was reduced to a hundred, sixty and forty in 1919. The notes are redeemed, if necessary, by the government in gold at Washington. If the gold reserve at any time falls below forty per cent, a tax is imposed upon the regional bank and it adds this tax to its rediscount rate. The idea is to check undue expansion, for an elastic currency must contract as well as expand. Over the whole system is the Federal Reserve Board which consists of five appointed members and the secretary of the treasury and the comptroller of the currency, increased to eight in 1922 by the addition of the so-called "dirt farmer." In 1927 after a contest of several years the McFadden-Pepper Act was passed. It grants charters of indeter-

minate length to Federal Reserve banks, allows national banks to make loans on improved urban real estate for five

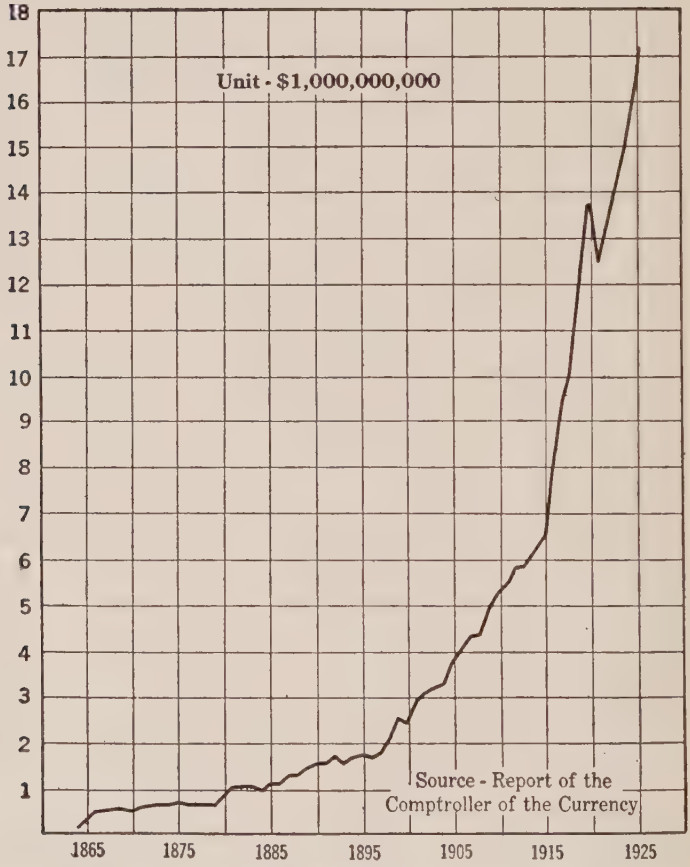
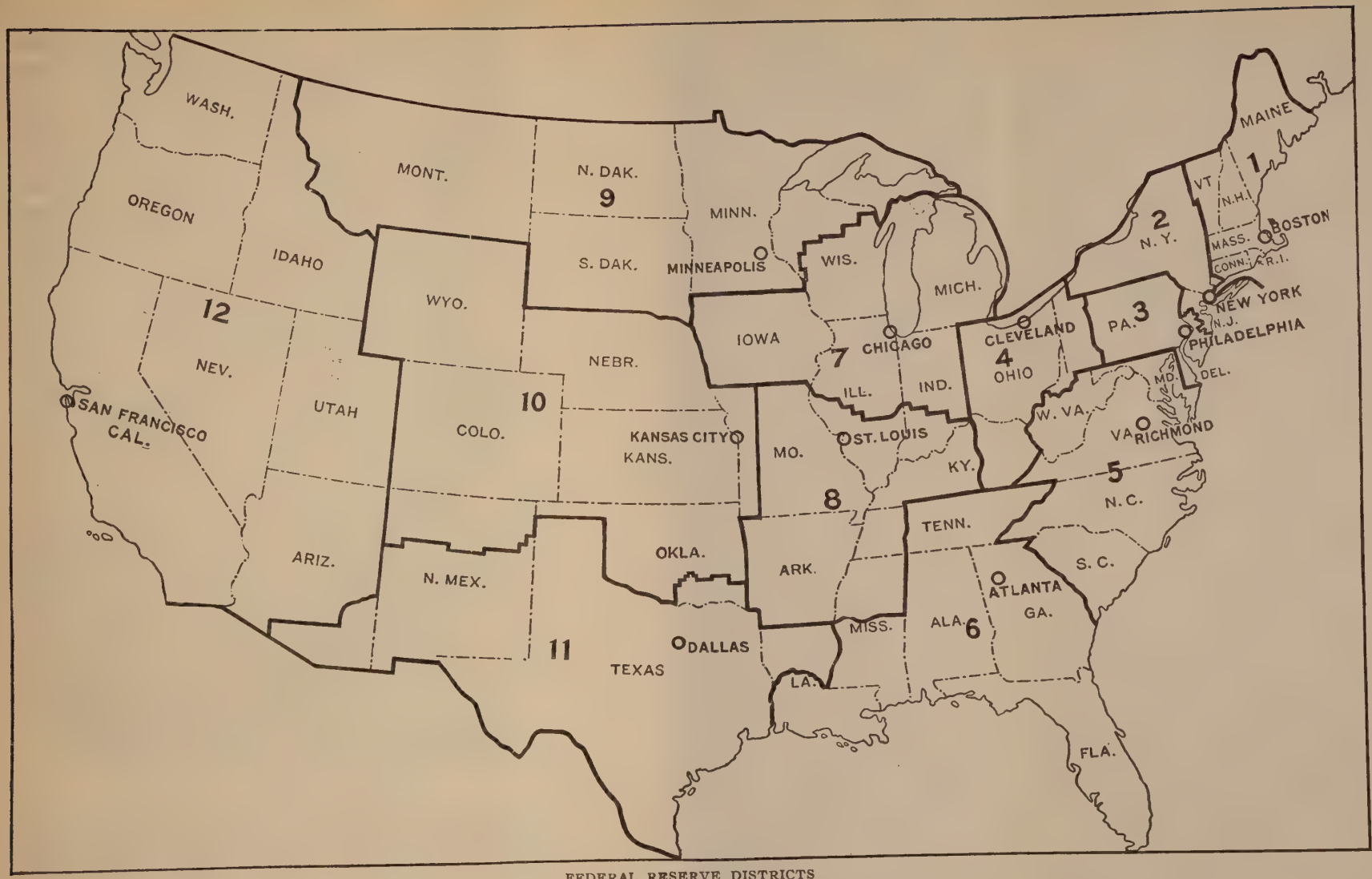


Chart No. 96. Individual Deposits (Including Postal Savings) in National Banks.

years in place of one as formerly, extends the powers of the national banks in dealing with investment securities, and permits national banks to establish a limited number of branches in the city, town, or county of the parent bank



FEDERAL RESERVE DISTRICTS

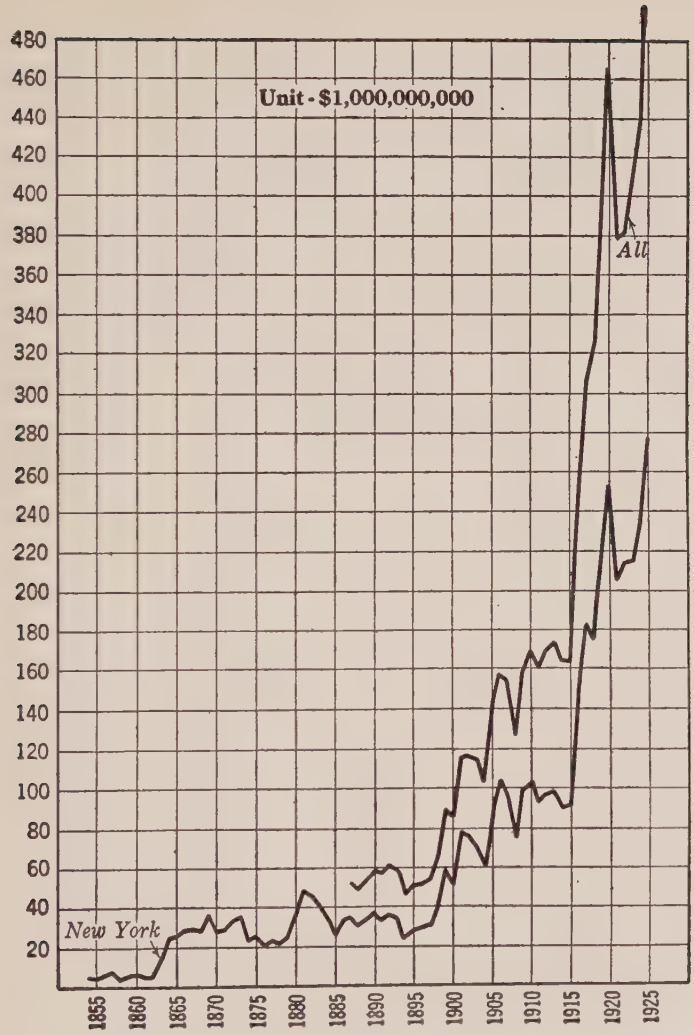


CHART NO. 97. BANK CLEARINGS.

if the state in which that unit is located allows branch banking to state institutions. No system of banking can save the country from periods of depression, but the Fed-

eral Reserve System has prevented disastrous panics and with approximately two-thirds of the banking capital of the United States is the most powerful system the world has ever known.

Other Banking and Savings Agencies.—Only the briefest reference can be made to other banking or saving agencies. Loan and trust companies were started in the first half of the nineteenth century, but the number was only thirty-five or thereabouts in 1875. Now, however, the number is about 1,700 and the resources are approximately twelve billions. Among the causes of rapid growth in recent years are: the increase in wealth, high interest rates, and "less state legislation, regulation and taxation" than found for other banking agencies. In the first quarter of the nineteenth century savings banks began in Boston, Baltimore, and New York. Growth was rather slow at first, but the banks are now nearly as numerous as loan and trust companies and the deposits are greater. School savings banks were started in 1876. The work is now generally coördinated with classes in English, salesmanship, advertising, and statistics. Such banks are now found in more than ten thousand school buildings and hold the deposits of nearly three million students. Because many people, especially those from southern Europe and the backward elements of the native stock, distrust banks, postal savings banks were begun in 1910. Since the system was started, the limit of an individual deposit has been increased from $500 to double that sum by 1917 and to $2,500 in 1918. Deposits in recent years have been well below the high point of $167,323,250 in 1919. Deposits in private banks, subject to great fluctuations, are about the same as those in the postal savings banks.

Two other agencies of saving—building and loan associations and insurance—will be noted. The Oxford Provident Building Association, an example of the first, was formed in Philadelphia in 1831, but the movement did not become permanent for a score of years. By 1893 the number of local associations was about six thousand and the number since then has about doubled, resources ap-

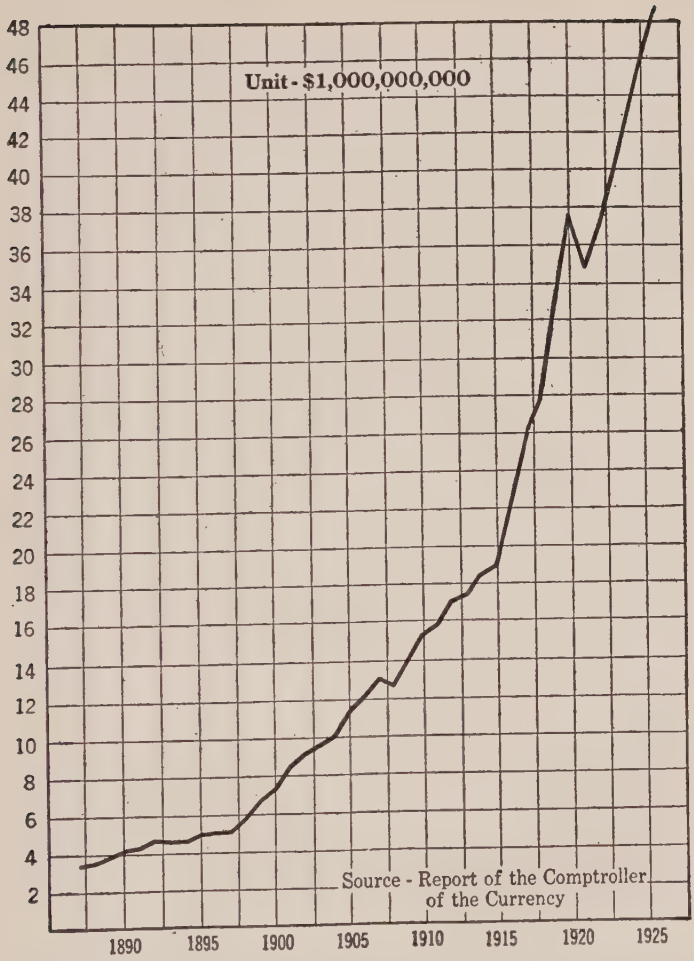


CHART No. 98. GROWTH IN ALL BANK DEPOSITS EXCEPT POSTAL SAVINGS.

proximating the five billion mark and the number of members approaching nine million. The origin of life insurance in the United States dates back to 1759 when a society was formed in Philadelphia to look after Presbyterian

ministers and their widows. With the formation of the Insurance Company of North America, thirty-seven years later, the real movement began. Early companies combined other business with life insurance, the first modern company dating from 1843 with the Mutual Life Insurance Company of New York. With marked fluctuations the growth has been rapid. Now there are about two-thirds as many policies as there are people with insurance for seventy billion dollars.

Panic of 1819.—During our history as a nation we have had several periods of depression or panic, but space will permit only the barest description of conditions in 1819, 1837, 1857, 1873, 1884, 1893, 1907, 1914, and 1920-1921.

After the War of 1812, as after the Revolutionary War, English merchants sought to regain the American markets through crushing out domestic manufactures by flooding the country with their own products. Undue speculation in western lands and a rapid increase in state banking were also factors. These banks often did not have adequate capital and were guilty of the worst frauds. In the words of another, they were generally anxious to issue "five times as much paper as they could ever redeem." The policy of the Second Bank of the United States and its early mismanagement were also contributing factors. The bank had a note circulation of about $1,911,000 in 1817 and $8,339,000 in 1818, but that was reduced to $3,589,000 in 1820; loans on the corresponding dates were $3,485,000, $41,181,000, and $31,401,000. The bank by contracting saved itself and forced the state banks to contract their note issues from about $100,000,000 in 1817 to $45,000,000 in 1819. Credit facilities for importers and others were thus reduced at a time when they were most needed, specie payments were partially suspended, export values fell, failures occurred, industries stopped, men lost work, and the government was threatened with deficits which occurred in 1820 and 1821. The government obtained slight loans, reduced the price of land to $1.25 an acre and took back the land not paid for under the old policy, and attempted to remedy affairs a little later by tariff legislation.

Panic of 1837.—Although the industrial crisis of 1825 in England had caused many English goods to be thrown upon the American markets and temporarily embarrassed American manufacturers and business men who had expanded unduly after the difficulties, 1819-1822, the first real panic came to the country in 1837. The causes of this panic were numerous and complicated, but among them may be mentioned: tariff reductions, which perhaps stimulated imports and injured American manufactures; the New York fire of 1835, which destroyed considerable property; the poor crops of 1835, 1837, and 1838; the growth of luxurious habits sufficiently evidenced by the fact that silk imports increased from a little less than $6,000,000 in 1831 to nearly $23,000,000 in 1836; the failure of Wilkes, Wilde, and Wiggin, three English concerns interested in American cotton; excessive internal improvements, which increased the state debts from about $26,500,000 in 1830 to over $170,000,000 in 1838 and $200,000,000 in 1840, and perhaps caused repudiation by such states as Mississippi, Louisiana, Maryland, Michigan, Indiana and Pennsylvania, though some afterwards paid in whole or in part; excessive importations, which made imports exceed exports by $200,000,000 during the decade; bad banking, revealed by the fact that from 1829 to 1837 banks increased from 329 to 788, capital from about $110,000,000 to $290,000,000, loans from $137,000,000 to $525,000,000, and note circulation from $48,000,000 to $149,000,000; the distribution of three installments, or about $28,000,000 of the government surplus to the states in proportion to number of representatives and senators; the speculation in western lands, which caused the government receipts to rise to about $24,000,000 in 1836, a higher sum for the first and only time in our history than that obtained from customs duties; and the Specie Circular of July 11, 1836, which directed the government agents to accept specie for the public lands and thereby caused numerous western banks to lose practically the only prop that made their notes acceptable.

On May 10, 1837, New York City banks suspended specie payments and within two months 250 bankruptcies oc-

curred. Real estate values and manufactured goods fell in value, and foodstuffs rose because of crop failures. In a few weeks twenty thousand workers lost their jobs. Difficulties continued until 1843, deficits in government revenues occurred, and Congress found it necessary to pass a bankruptcy law which relieved approximately forty thousand people of debts amounting to about $450,000,000. Sales of public lands fell from a high mark of about twenty million acres in 1836 to about one million in 1841, and bank note circulation declined from about $149,000,000 in 1837 to $58,000,000 in 1843. The withholding of the fourth installment of the surplus, the issuance of treasury notes, and loans helped weather the crisis, and business gradually recovered until conditions became normal about 1844.

Panic of 1857.—After that year recovery was rapid, and, with the exception of 1847, 1848, and 1849, the government faced no deficits until 1858, following the Panic of 1857. The difficulty of that year was precipitated by the failure in August of the Ohio Life and Trust Company of Cincinnati. Investigation showed that the management of the company had used five millions in railroad loans and that the New York agent had defaulted. Many New York banks reduced their loans and this caused a financial crash, which, for a while, involved most of the banks of the country. These institutions had expanded unduly, from 691 in 1843 to 1,416 in 1857, the capital from about $229,000,000 to nearly $371,000,000, the loans from about $255,000,000 to nearly $685,000,000, the deposits from a little more than $56,000,000 to over $230,000,000, the note circulation from a little less than $59,000,000 to nearly $215,000,000, and the specie from nearly $34,000,000 to over $58,000,000. Liabilities had consequently increased more rapidly than resources. The increase in gold production had stimulated unduly practically all lines of industry. Between 1830 and 1860 over $1,250,000,000 had been invested in railroads. This development was too rapid in the West, where such important roads as the Illinois Central, the Michigan Central, and the New York and Erie had gone into bankruptcy. Speculation in land was rife

and receipts from land sales averaged over $9,500,000 for the three years, 1854-1856, a figure not reached in any other year, 1816-1861, with the exception of 1835 and 1836. Crops were good, but some prices dropped, as, for instance, cotton, which fell from about sixteen cents a pound to nine. Perhaps the low tariff stimulated imports unduly and had something to do with the five thousand business failures. Bank contraction, economy, and treasury notes helped the country weather the crisis and the evil effects soon passed.

Panic of 1873.—The Panic of 1873 was in part a result of heavy Civil War expenditures and the low tone of public morality in Grant's administration as evidenced by "Black Friday," 1869, when Jay Gould and James Fisk attempted to secure control of the gold supply and exact high prices for it; by the carpet-bag, scalawag, negro governments in southern states, as South Carolina and Louisiana; by the excesses of the newly rich through fraudulent war contracts; by the corrupt political rings, as, for instance, the Tweed Ring of New York City; by the dishonest practices of Belknap, Secretary of War, in the management of western army posts; by Babcock, Grant's private secretary, who profited from whisky frauds; by numerous post-office employees in the "pet routes" or "star routes" of the West; by the Credit Mobilier scandal; by the bribery of the New York judiciary by Jay Gould and the Erie ring; and by the Salary Grab Act of Congress. Expenditures naturally increased and the people paid little attention to the warning given by rising imports. Business was expanding unduly here and elsewhere and the new adjustments due to the opening of the Suez Canal, 1868, caused difficulty. Town, city, and state governments, manufacturing corporations and mining companies had sold bonds until they were a drug on the market.

Perhaps, however, the most important cause was the excessive railroad construction which unduly stimulated other industries. From 1860 to 1867 construction had averaged only 1,311 miles, but for the four years ending in 1872 the total was over 25,000 miles, or five times the earlier aver-

age. The comptroller of the currency estimated in the preceding five years that railroad construction had cost about $1,700,000,000, or about $340,000,000 a year. On September 13, 1873, a stock brokerage house failed and bank runs soon followed. The Stock Exchange was closed for ten days. On September 24, the New York banks partially suspended specie payment. Clearing house certificates were issued to banks on the basis of properly approved securities up to seventy-five per cent of their value, and the certificates were accepted in settlement of clearing house balances. Many banks, railroads, and business houses failed and depression lasted until 1878 or 1879 before a period of renewed prosperity began.

Crisis of 1884.—A crisis developed in 1884. Domestic trade decreased in 1883 and 1884 at the very time that silver currency was increasing. Europe bought less from us than she had done in five years, but sold as much as she had done in 1880 and, moreover, disposed of American securities, thus draining money out of the country. This fact, coupled with the fear that silver might be forced into circulation through treasury payments at New York and the rapid railroad construction, were underlying causes of the panic. The annual railroad construction jumped from an average of 2,296 for 1874-1878 to an average of 7,936, 1879-1883. Extensive railroad construction, of course, stimulated unduly iron and steel industries, and their disturbance led to the closing of many mines and the consequent increase of unemployment. Many mercantile failures occurred in 1883 and uneasiness was increased January 1, 1884, when a receiver was appointed for the New York and New England Railroad. The Oregon and Transcontinental Company and the North River Construction Company soon became involved in difficulties.

But the real trouble came in May when the business community suddenly lost faith in the integrity of its members. The Marine National Bank of New York failed on May 6; its president was a member of Grant and Ward, a firm which soon went to the wall with debts of about $16,000,000 and assets of $67,000. On May 13, John C.

Eno, president of the Second National Bank, was found to be a defaulter for $3,185,000. About the same time the Metropolitan Bank suspended because of the speculation of its president. Any one of these events would have shaken confidence; all of them coming to the surface in a week virtually destroyed it. The banks again received clearing house certificates on the basis of deposited securities "twenty-five per cent greater in value than the certificates allotted and good for the settlement of balances at the Clearing-House. . . ."

Panic of 1893.—The Panic of 1893 was one of the worst the country has ever known. Excessive silver coinage crowded gold out of circulation, the redemption of greenbacks kept the gold reserve low, the balance of trade turned against us, and, moreover, many people lost faith in the government's ability to maintain specie payments. Added to these difficulties were over-speculation, inflated credit, and over-investment of capital in risky enterprises. In 1892 national bank loans increased about $165,000,000 and two-thirds of this was in the South and West. On February 20, the Philadelphia and Reading Railway Company failed with a debt of $125,000,000 on a $40,000,000 capital. On May 5 the National Cordage Company with a capital of $20,000,000 and $10,000,000 in liabilities likewise failed. Other failures followed and cash reserves were rapidly withdrawn from city banks.

During the year, 573 banks and banking institutions, chiefly in the West, failed. Gold was hoarded and a premium of four per cent on cash was offered by money-brokers. Commercial failures from April 1 to October 1, 1892, numbered 4,171 with liabilities of $41,110,322; the corresponding figures for 1893 were 8,105 and $284,663,624. The Erie, the Northern Pacific, the Union Pacific, and other roads joined the Philadelphia and Reading until about one-fourth of the railway capital of the country was in the hands of receivers. Earnings, of course, declined, new construction was delayed, and the production of coal and iron necessarily decreased. In 1894 the corn crop failed and the price of wheat, because of the slackening of the

European demand, fell to less than fifty cents a bushel. Silver fell greatly in value, mines were closed, and employees deprived of work due to the closing of the India mints to silver. Unemployment led to strikes and riots such as the Pullman Strike of 1894, and Coxey's Army. The use of about $69,000,000 in clearing house certificates, payment of a premium for currency, gold imports, the sale of bonds, and the election of 1896 helped restore confidence and attain normalcy.

Panic of 1907.—From 1897 to 1907 prices rose almost continuously, with the exception of a slight difficulty in 1903, and this movement led to speculative investment and over-expansion, a tendency favored by the combination movement. The business community, moreover, appeared to lose its caution and excess became common. Credit for over $500,000,000 had been obtained in Europe, and about $300,000,000 in loans had been placed in New York by interior banks. State banks and trust companies had multiplied rapidly and had been subjected to little regulation. The San Francisco earthquake had destroyed a considerable amount of capital and the increasing difficulty in marketing high-grade securities foreshadowed trouble. When the banks commenced to contract loans in March, a "rich men's panic," due to the necessity of sacrificing good collateral to satisfy their creditors, developed. In June an eight-million-dollar New York manufacturing house went to the wall and two midsummer city loans failed. In early autumn a fifty-two-million-dollar street railway combination went to a receiver and a few weeks later the thirty-four-million-dollar Westinghouse Electric Company did likewise.

On October 21 the National Bank of Commerce suddenly announced that it would no longer accept for collection the checks of the Knickerbocker Trust Company; before noon the next day the panic-stricken depositors had forced the bank to close its doors. A run, of course, began on other institutions. Clearing-house certificates were used to the amount of $238,000,000, the government advanced $35,000,000 to the national banks which made loans to the

trust companies on good security, and the gold premium amounted to four per cent for two months. Gold was engaged in London at the unusual rate of $4.91 and the Bank of London lost $73,400,000 in November and December. The makeshift currency amounted to about $96,000,000. The government offered the national banks $50,000,000 in government bonds and $100,000,000 in one-year notes to provide new circulation, but the worst had passed and only $24,998,040 of the former and $15,436,500 of the latter were taken. Conditions, however, remained bad in 1908, for business failures in the first nine months increased fifty-five per cent in number and 120 per cent in liabilities over the same months of 1907, iron trade for the first six months was fifty per cent lower than for the corresponding time in 1907, railroad traffic receipts for 1908 were nearly twelve per cent lower than for 1907, checks drawn on banks decreased seventeen per cent, and the textile trade in March, 1908, showed a decrease of twenty-five per cent in output.

Crisis of 1914.—Although the Stock Exchange is in the second century of its history, it has closed its doors only twice, once in 1873 for ten days, and once in 1914 for about four and a half months. The last occasion was due to the outbreak of the European War. During the crisis high-grade securities were harder hit and more "lastingly affected" than in 1907; in some cases they were ten to twenty per cent lower than in that year. Foreign owners sold their American securities in large amounts and this sale continued even after unrestricted trading in bonds began once more. Hoarding commenced because people feared for the future of capital. Confidence was speedily restored, however, for bargain hunters appeared and began to buy high-grade securities at low prices, and Europe, on the whole, demanded little gold, but large amounts of supplies, munitions of war, and foodstuffs. Failures in 1913 amounted to 16,037 and liabilities to $272,672,288; the corresponding figures for 1914 were 18,280 and $357,908,859, and for 1915, 22,156 and $302,286,148. Although these amounts were greater than in 1907, the variation in amount

of liabilities was not so marked and the depression did not last so long.

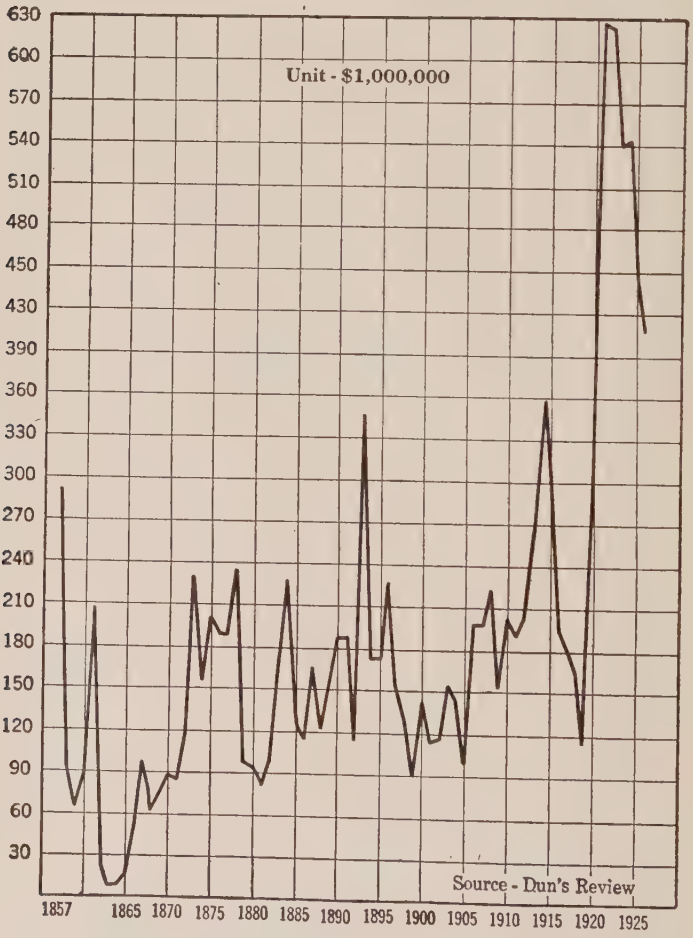


CHART NO. 99. AGGREGATE LIABILITIES OF COMMERCIAL FAILURES.

Depression of 1920-1921.—The Crisis of 1920 was due in part to the high wages and profits in the few previous years, to extravagant living, over-expansion, and specula-

tion. The price level rose from 100 in 1913 to about 272 in May, 1920, but buyers checked this movement by curtailing purchases. Naturally luxuries were dropped first, but the curtailment of our demand for Japanese silks led to a decrease in the Japanese demand for our cotton and other products. Retailers who had high-priced goods on their shelves and manufacturers who had costly raw materials on hand were in a tight place. Automobiles, textiles, hides and rubber, grain, cotton, live stock, and other commodities fell rapidly. Railroad earnings declined and freight loadings in 1921 went ten to twelve per cent below 1920. Banking interests were forced to contract loans and refuse aid to speculators. Sales were thus made necessary, orders for more goods were cancelled, and a general slackening of industry occurred. About 3,500,000 more people were unemployed on January 1, 1921, than on January 1, 1920, and other workers suffered through wage reductions. Agricultural products fell rapidly in price and high transportation charges and foreign competition injured the farmers.

Business failures, numbering 6,451 in 1919, had trebled by 1921 and went to 22,400 in 1922; the amount of liabilities involved was nearly seven times as great in 1921 as in 1919 and decreased little in 1922. The Federal Reserve system prevented a wide-spread panic, for it discouraged speculation by raising the discount rates of the banks and urging a deflation of the currency. The "buyers' strike" at home and decreased demand abroad helped reduce prices and bring conditions back to normal. In 1923 bank deposits, railroad traffic, mail order houses, department stores, various mining industries, and manufactories, such as automobile establishments, set new high marks, for the crisis had been successfully weathered and confidence had been restored.

Revolutionary War.—Only the briefest mention can be made of war finance, which consists chiefly of the levy of taxes and the placing of loans, with the preference apparent for the latter. Six struggles will be referred to: the Revolutionary War, 1775-1783; the Second War of Inde-

pendence, 1812-1815; the Mexican War, 1846-1848; the Civil War, 1861-1865; the Spanish-American War, 1898; and the European War, 1917-1918.

In financing the Revolutionary War, aside from lotteries, the confiscation of enemy property, etc., the issuance of paper money, requisitions on the states, and borrowing were the common methods. The first has already been discussed in connection with paper money, but because it operated as a sort of gradual tax it might have been considered with requisitions. The latter were requests issued by the central government for contributions by the states, for the government had no adequate taxing power and the states were disinclined to pay. Three specie requisitions in 1780 and 1781 for about $10,600,000 yielded less than $1,600,000, and four requisitions, 1777-1779, for $95,000,000 in paper yielded only $54,667,000. Requisitions for specific supplies such as beef, pork, flour, corn, forage were a little more successful, but much material spoiled through lack of transportation facilities and the acts of disgruntled teamsters who at times deliberately unloaded supplies at the wrong place because they were forced to work against their will. Domestic loans, September, 1777, until the offices closed, yielded about $63,289,000 in paper with a specie value of $7,684,000. France gave us considerable money in the early period, and, 1777-1783 inclusive, loaned us $6,352,500; Holland, 1782-1783, loaned us $1,304,000; and Spain, 1781-1782, $174,017. Other expenditures were made by these nations in our behalf; for instance, France's expenditure for our benefit, according to Professor D. S. Muzzey, amounted to about $200,000,000.

War of 1812.—The War of 1812 was financed by the issue of treasury notes, the sale of bonds, and by taxation. The total amount of treasury notes authorized was $36,680,794, and the total amount borrowed by the government up to the close of 1814, exclusive of treasury notes and temporary loans, was $41,010,000. New England, because of opposition to the war, contributed less than $3,000,000. During the period 1812-1816, the government realized, be-

cause of the loss in placing the loans, only $34,000,000 out of loans for more than $80,000,000. Shortly after the war began the tariff duties were doubled. Internal revenue duties of various sorts were levied during the war, and the yield, 1814-1817, inclusive, amounted to $15,168,636. Direct taxes for $3,000,000 were levied in 1814, for $6,000,000 in 1815, and for $3,000,000 in 1816; the amount collected, 1814-1817, was $10,469,992.

Mexican War.—The Mexican War, 1846-1848, was more easily financed than either of the preceding wars because of the greater resources of the country and the shortness and decisiveness of the conflict. The excess of expenditures over receipts amounted to $63,605,621 and this was easily met by loans in the form of treasury notes and government stock. All the loans, unlike those of 1812-1814, were easily placed at from par to two per cent above par. On one of the loans for $18,000,000, bids of about $57,723,000 were placed and the loan was subscribed entirely in specie, according to Professor D. R. Dewey, "the first loan negotiated on this basis since the foundation of the government."

Civil War.—In financing the Civil War numerous methods were used, but the most productive were issuing greenbacks, borrowing, and levying tariff and internal revenue duties. The issuance of greenbacks has already been noted in connection with paper money and here the only point mentioned will be that through enhanced prices the greenbacks probably increased the cost of the war about $750,000,000. Sales of various kinds of bonds during the course of the war amounted to over $2,600,000,000, about two-fifths of which were long term bonds. Possibly the weakest point in Civil War finance was the delay in applying taxation; the ratio of loans to taxes in 1861-1862 was $8.52 to $1.00 and in 1864-1865, $2.95 to $1.00. Tariff duties were increased to a level of about thirty-seven per cent in 1862 and to forty-seven per cent in 1864; internal revenue duties were increased in much the same way and toward the close of the war were twice as productive as the tariff duties. An income tax was authorized in 1861 and

other taxes came; up to 1872, when the income tax was entirely repealed, the yield had amounted to about $347,000,000. The South financed the war, or attempted to do so, through the sale of bonds, export taxes, general taxation, and paper money. The Confederate national government issued about a billion in paper, and states, cities, and business establishments followed suit in varying amounts.

Spanish-American War.—When war broke out with Spain, April 19, 1898, Congress faced the question of increased expenditures, but the difficulties scarcely merit mention in comparison with those of the Civil War. The Act of June 13 applied the two main methods, loans and internal revenue duties. The bond issue was for $200,000,000 at three per cent, and the amount, offered by would-be subscribers, due to patriotism and self-interest, chiefly the latter, was seven times the issue. Although the Dingley tariff rates were undisturbed, considerable money was raised by new or increased internal taxes. Most of the taxes on tobacco and fermented liquors were doubled, but the duties on spirits were left unchanged as a special reserve for future emergencies. Special taxes were placed on banks, brokers, and proprietors of places of amusement, such as theaters, bowling alleys, billiard halls, and pool-rooms. Stamp taxes were placed on such things as the issue or sale of corporation securities, bank checks, bills of exchange, drafts, express and freight receipts, telephone and telegraph messages, insurance policies, patent and proprietary medicines, toilet articles, chewing gum, and wines. An excise tax was placed on business engaged in refining sugar and petroleum and a graduated legacy tax ranging from three-fourths of one per cent to a maximum of fifteen per cent was imposed.

European War.—The European War was financed chiefly by loans and taxation. The government in five loans asked for $18,500,000,000 and each loan was over-subscribed. The interest rate varied from 3.5 per cent in the first to 4 in the second, to 4.25 in the third and fourth, and to 4.75 in the Victory Loan. Over 65,000,000 subscribers helped in these loans, though, of course, many helped in

all. The fourth loan for $6,000,000,000, over-subscribed and accepted to the amount of $6,993,073,250, from about 21,000,000 subscribers was the most gigantic transaction in history. Patriotism and self-interest were the main factors, the latter probably with the heavy subscribers due to tax exemption features. Baby bonds and war savings thrift stamps purchased at a quarter made possible a contribution by any one who desired to aid.

In 1913, through the adoption of an amendment, Congress had been able to levy an income tax, which with the excess profits tax furnished the main revenue during the war. The graduation process was applied and the largest incomes and profits were taxed higher proportionately than the lower ones; for instance, the highest rate for the income tax reached 67 per cent and for the excess profits tax 65. Only one-third was thus left to the owner. These rates were subsequently reduced. The inheritance tax was increased and graded from 2 to 25 per cent. Postage rates were increased and a zone system gave higher rates for second class mail. Almost everything imaginable was touched by internal revenue duties, for instance, liquors, tobacco, legal and business documents, luxuries and semi-luxuries, patent medicines, picture films, admission dues, club dues, etc. The taxes were of such a nature as to discourage activities commonly considered non-essential.

Although taxes have been materially reduced, from a high point of $6,704,414,437 for the fiscal year, 1919-1920, to $3,204,133,000 three years later, the latter figure was about five times the total of 1912, and the country for decades will bear the burden of the World War. Our debt June 30, 1926, was reported at $19,643,216,315, in comparison with $25,482,034,419 on the corresponding date in 1919. Partially offsetting this heavy debt is more than $11,000,000,000 due us from foreign nations, a debt we can collect by lowering our tariff barriers, thus allowing them to pay in goods.

Receipts and Expenditures.—The nature of receipts is indicated in connection with the tariff and the financing of wars. And so we need merely to note that throughout

our history the customs tariff has been most productive, though in times of war, especially since 1860, the internal revenue duties have yielded a far larger amount of revenue. Another source not to be overlooked is the sale of public land, the government having taken in about $500,000,000 in this way and having made a net profit of about $350,000,000. But that source of revenue is becoming less important with the diminution of our public lands. Only once, in 1836, did the receipts from the land sales pass the customs receipts.

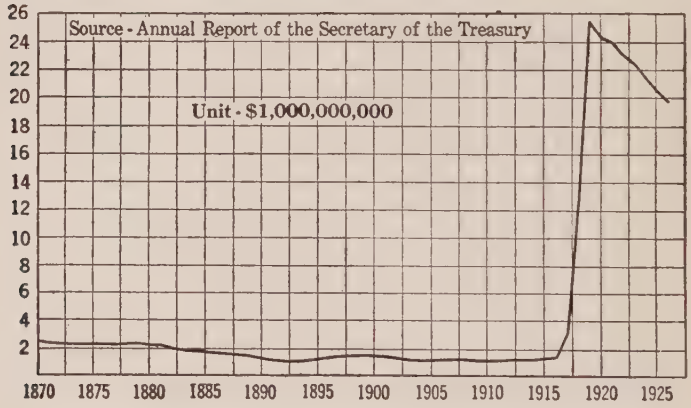


CHART NO. 100. PRINCIPAL OF PUBLIC DEBT, JUNE 30.

In the colonial period, expenditures were generally light, the maintenance of the governor being the heaviest single charge. Other officers, however, had to be supported. From 1775 to 1815 war was the big item of expenditure as it has been throughout our history, but the order was: interest on the debt, army, and navy. From 1815 to 1860 nearly a third of our expenditures of about $1,500,000,000 was charged to war, a fifth to the navy, and lesser amounts to interest, pensions, and Indians. From 1861 to 1865 practically all expenditures went for war, and during the remainder of the century, interest on the public debt (extinguished in the thirties), pensions, war, and navy led in that order. In the twentieth century, up to our entrance

into the World War, expenditures averaged over $600,000,000 yearly, pensions, army and navy being the most important. And our expenditures since 1917 have been almost entirely for war. A little thought will show that approximately seven-eighths of our receipts since 1775 have gone for war, for army, navy, pensions, and interest on the public debt are due well-nigh entirely to war or to preparation for war. Expenditures for administrative, legislative and judicial officers, for the civil administration, in short, form a negligible part of our total expenditures.

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